

**THE
RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation
INCORPORATING

Railway Engineer • TRANSPORT • The Railway News

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DISPATCH OF "THE RAILWAY GAZETTE"
OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas, as they are stopped under the provisions of Statutory Rules & Orders 1939, No. 1440

TO CALLERS AND TELEPHONERS

In view of the restoration of summer time our office hours until further notice are:—

Mondays to Fridays - 9 a.m. till 5 p.m.

Saturdays - 9 a.m. till 12.30 p.m.

The office will be closed on the first Saturday in every month until November 2, inclusive

With the object of conserving paper by avoiding the return of unsold copies, readers are advised in the interests of all concerned to place a regular order for THE RAILWAY GAZETTE either with their newsagent or direct with the Publisher

Easter Holiday Travel

NOTWITHSTANDING the already heavy pressure on their services, the railway companies provided a greatly augmented programme of passenger trains to cater for Easter travellers and were rewarded by a volume of passengers that exceeded earlier pessimistic forecasts. The fact that the holiday fell this year within a day or so of its earliest possible date was no doubt largely offset by the good weather. In the event the enterprise of the railways was amply repaid, for Euston reported record bookings, with Good Friday takings double those of normal years. The L.M.S.R. ran 385 additional passenger trains on the pre-holiday Thursday alone and during the Easter period also provided 109 special leave trains for the Forces. On the L.N.E.R. a number of recently-withdrawn passenger trains were temporarily restored and supplementary trains were also run. On the G.W.R. well-known trains, suspended since the outbreak of war and reinstated for the Christmas holiday were again in the timetable; the 3.30 p.m. West of England express on March 21 ran in three parts. The Southern Railway put into service many additional trains, especially to coast resorts.

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Canal Companies and the War

The point made in THE RAILWAY GAZETTE of March 22, that the canals and other forms of transport were anxiously awaiting the outcome of the consideration being given to the increase in railway charges to cover wartime rises in costs, was emphasised by Mr. E. J. Woolley in his address to Grand Union Canal stockholders on March 27. He pointed to the disability suffered by canals from the fact that the railways were still maintaining their pre-war charges and declared that other methods of transport were faced with daily increasing costs. Mr. Woolley seemed to imagine that the railway companies were keeping their charges down because of the agreement with the Government, implying that in some way that arrangement enabled them to do so. In point of fact, it is a basic feature of the financial arrangement concluded between the State and the companies that charges are to be increased to cover additional costs arising from the war. Until that step is taken the railways suffer directly from a mounting cost ratio as least as much as other forms of transport are inconvenienced from inability to advance their charges for fear of forcing traffic on the rails.

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Trans-Canada Air Lines

The response of the travelling public in 1939 to the services offered by the Trans-Canada Air Lines considerably exceeded expectations. The planes were often filled to capacity, especially during the summer, states the annual report, which shows that the load factor for all schedules during the year was 56.1 per cent. The planes flew 3,125,393 miles in 19,499 hours. Less than 2 per cent. of scheduled mileage was cancelled on account of adverse weather. Mails carried totalled 452,899 lb. and express freight amounted to 45,819 lb. in 10,897 shipments. There were 21,569 passengers carried and the average passenger journey was 559 miles. The company now has routes totalling 3,644 miles, and covers 9,044 scheduled miles daily with eight round trips. The service life of the engines, it is stated, may prove to be nearer 6,000 hours than the 4,000 hours originally expected. The report forecasts increased services to cater for the growing traffic. Apart from the provision of further services in Canada, an application for the right to fly between Toronto and New York and Toronto and Buffalo is being considered by the U.S.A. Civil Aeronautics Authority at Washington. Canadian licences have been granted.

Overseas Railway Traffics

Argentine railway traffics in the 39th week of the current financial year have been generally lower because of Holy Week, and the totals for the 38th and 39th weeks show decreases of 187,000 pesos on the Buenos Ayres & Pacific, of 110,000 on the Buenos Ayres Western, and of 744,250 on the Central Argentine. The Buenos Ayres Great Southern has, however, a net improvement of 73,000 pesos for the two weeks. On the Central Uruguay the traffic receipts for the 39 weeks of the financial year amount to £804,069, an improvement of £92,444. Antofagasta earnings continue to advance and are £61,900 up for the first twelve weeks of 1940.

	No. of Week	Weekly Traffic	Inc. or Decrease	Aggregate Traffic	Inc. or Decrease
Buenos Ayres & Pacific*	39th	1,760	- 112	52,231	- 1,108
Buenos Ayres Great Southern*	39th	2,580	- 192	90,594	- 1,056
Buenos Ayres Western*	39th	737	- 203	29,825	- 2,051
Central Argentine*	39th	1,626	- 550	67,715	- 5,061
Canadian Pacific	11th	£25,000	+ £72,000	£6,405,800	+ £1,235,400
Bombay, Baroda & Central India	51st	289,200	+ 23,175	8,824,725	+ 204,600

* Traffic returns in thousands of pesos

Canadian Pacific gross earnings for the first two months of 1940 amounted to £4,832,000, an increase of £1,053,000, and the net earnings of £760,200 for the same period have shown an improvement of £621,400.

* * * *

Jamaica Government Railway

The drop of £37,235 in revenue for the year ended March 31, 1939, was due mainly to less bananas exported on account of leaf spot disease and to road competition. Increased wages granted after the labour disturbances of May, 1938, was the chief cause of the rise of £12,308 in expenditure. Passengers increased in number by 15,057, but passenger receipts were £1,776 lower because of cheaper fares to meet road competition. The volume of goods traffic was 34,002 tons less and the receipts £35,782 lower, notwithstanding increases in general merchandise of 10,000 tons and £2,500.

	1937-38	1938-39
Passengers ...	405,025	420,084
Goods, tons ...	370,258	336,256
Train-miles ...	455,462	447,640
Operating ratio, per cent.	81.36	95.50
Passenger receipts ...	£26,166	£24,390
Goods receipts ...	274,241	238,459
Gross receipts ...	338,500	301,265
Expenditure, including renewals ...	275,420	287,728
Working profit ...	63,080	13,537

The amount to be met in 1938-39 from the general revenue of the Colony is £44,605.

* * * *

Canadian Pacific Railway Results

In view of the widespread disappointment of hopes that a dividend would have been forthcoming for the year 1939 on Canadian Pacific Railway preference stock, particular interest attaches to the details of the financial results which were cabled from Montreal on March 11. The directors' preliminary statement, given in THE RAILWAY GAZETTE of February 23, merely stated that while operations for 1939 had resulted in a substantial improvement, the uncertainties of the present situation were such that the board were not warranted in declaring any dividend on the preference stock. The cabled statement shows that gross earnings were \$9,021,718 higher than for 1938 and totalled \$151,280,699. There was an increase in working expenses, including taxes, of \$1,250,365 to \$122,756,880 so that net earnings at \$28,523,819 were better by \$7,771,353. Other income totalled \$6,764,851 as against \$7,363,673; the total available for fixed charges was therefore \$35,288,670 or \$7,172,531 more. Fixed

charges amounted to \$24,700,692 and the company's payment under the "Soo" bond guarantee was only \$805,830 as compared with \$2,085,818 in 1938. With the balance brought forward from the previous year of \$136,969,650 there is a total of \$146,751,798. Deducting a loss on lines abandoned and certain small debit items amounting in all to \$5,398,296, there remains \$141,353,502 carried forward.

* * * *

Changes in Amsterdam

A couple of interesting points emerge from the article published in our issue last week, describing the £4,000,000 works recently completed in the modernisation of the railways in Amsterdam. The first is the closing of the Weesperpoort terminus. This station was very conveniently situated in the business centre of the Dutch commercial capital, and was popular with the travelling public owing both to its position and to its convenient layout entirely at street level. It is surprising, therefore, that such a terminus should have been abandoned, especially as it would appear to have been eminently suitable for handling the increased suburban traffic commensurate with the expansion of the city, and made possible by present-day faster and more comfortable electric and diesel multiple-unit services. The Netherlands Railway administration must have had very good reasons for its policy in this connection. An interurban service second to none has now developed in Holland, and the second point of interest is that suburban traffic does not seem to have been similarly catered for. The more remote positions of the new city stations and their spacious layout—involving considerable distances between train and street—do not appear to be particularly well adapted to the needs of the short-distance traveller such as business men living in the many pleasant residential areas along the Amersfoort and Utrecht lines. Possibly it is calculated that suburban traffic of this kind is unremunerative to the railway and may be better dealt with by other means.

* * * *

A Railway Contribution to the National Life

A report analysing the principal expenditures of the Pennsylvania Railroad system in the ten years ended with 1939, which has recently been issued, states that during this period, consisting entirely of what are known as depression years, the undertaking paid \$2,074,000,000 in wages, which provided the livelihood of an average of 123,000 employees and their families. Towards the support of the four kinds of government—Federal, State, County, and Municipal—it contributed \$344,000,000 in taxes, but to its own stockholders it paid dividends totalling only \$242,000,000 for the period. On improvements and additions to equipment, structures, and plant, it expended \$574,000,000. For the purchase of materials, fuel, and supplies, the undertaking paid \$798,000,000 during the ten years. Included among the principal items were \$188,000,000 for coal, \$60,000,000 for new locomotives and rolling stock, \$22,000,000 for rails, \$17,000,000 for new sleepers, \$20,000,000 for stationery and printing, and \$18,000,000 for food and other dining car supplies.

* * * *

The Fastest Trains in the World

Accelerations, effective from January 28, of the competing high-speed services between Chicago and the Twin Cities of St. Paul and Minneapolis, as detailed on p. 497, have created new speed records. The morning diesel-operated Zephyr of the Burlington Company from Chicago, allowed 6 hr. only for the 429.5 miles to St. Paul, including eight intermediate stops, must run the 54.6 miles from East Dubuque to Prairie du Chien in 39 min., at an average of 84.0 m.p.h., thus making the fastest regular

railway run in the world. Similarly the eastbound morning Hiawatha of the Milwaukee covers the 78.2 miles from Sparta to Portage in 59 min., and the average so entailed of 79.6 m.p.h. from start to stop is an easy record for steam. The corresponding afternoon train, furthermore, must make in succession start to stop runs at 78.0, 78.4, and 76.0 m.p.h., all of which are faster than anything previously scheduled with steam haulage; the latter train is booked over the 280.8 miles from La Crosse to Chicago—12 miles further than from Newcastle to London—in 4 hr. 1 min., with four intermediate stops. When first put on in 1935 six competing trains, three in each direction, made the journey between Chicago and St. Paul, ranging in length from the 408.6 miles of the North Western to the 429.5 miles of the Burlington route, in 6½ hr.; now eight trains, all with more numerous intermediate stops and of more ample accommodation than first provided, do the journey in 6¼ hr., and one, by the longest route, in 6 hr.

* * * *

Red for Clear and Green for Danger

Red has been the colour of almost universal choice to indicate danger on the railway and elsewhere. One of the rare instances to the contrary is to be found, however, in the Taunus Railway, opened between Frankfort and Wiesbaden in 1840, where for some years the green light was the signal to stop and the red indicated line clear, so adding to the prolonged confusion of early German signalling systems which was only partly cleared up by the rules introduced for the North German Confederation in 1870 and extended to the Reich in 1875. The Taunus unlike the other German lines made no use of fixed signals for sending messages from point to point, but employed wire worked gongs—which were very unsatisfactory—and later the step-by-step telegraph of Fardeley, adopted in 1844 and subsequently improved by being made into a printing telegraph. The earth return, proved possible by the experiments of the physicist Steinheil, inventor of an efficient tel-graph of his own, was used for the first time in regular work in Germany on the Taunus line. Strange as it may seem, there was once a busy line in London which had several signals that showed red for clear and green for danger.

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Noise Insulation of Railway Carriages

Among the more interesting of the conclusions reached by M. Bancelin and M. Renault in their paper "Reduction of Noise in Railway Rolling Stock" (already mentioned at page 326 of our March 8 issue) may be cited two that are specially worthy of notice. The use of double walls with an air space in between, an effective measure for noise reduction, may be rendered less effective by the introduction of special materials often recommended for the purpose. Double windows, with the panes separated by two inches or so, keep out noises more effectively than single panes, but no advantage is gained by using thick glass. Regarding the general form of construction of carriages it has been found that the solid heavily built and upholstered types provide a greater freedom from external noise than lighter types except, of course, where special measures are taken in the latter. Railcars with pneumatic tyres or other unusual features must obviously be classed in a category by themselves. Common experience is enough to show that openings (of windows for instance) lead to increase of noise in a carriage. To obviate the need for openings leading directly to the exterior, air-conditioning may be employed, and thus an added advantage of this refinement is that it leads indirectly to a better approach to silence in carriages.

Railways and E.P.T.

ALTHOUGH the principle of Excess Profits Duty has been accepted throughout industry, it has become increasingly clear in the past few months that in the operation of the scheme as at present on the Statute Book many hardships will arise unless a sympathetic understanding of individual circumstances is exercised by the authorities. Such a possibility, indeed, was envisaged by the Chancellor of the Exchequer when he introduced the tax, for he promised consideration of representations from responsible bodies of traders designed to render the impost as equitable as possible in its operation. There has been no lack of endeavour on the part of industrial organisations to bring before the Chancellor their views as to the amendments required. Industry will await anxiously the Budget speech on April 23 to learn what decisions have been reached as a result of these representations and what changes are proposed in E.P.T., both as to form and amount, for the new financial year.

So far as the railway companies are concerned their position *vis-à-vis* the new tax remains so uncertain as to render extremely speculative any calculation of its incidence upon the companies. The chairman of each of the main-line railways dealt with the subject at the annual meetings, but none of them shed any direct light upon the probable outcome of the present situation. Lord Horne, at the Great Western Railway meeting, appeared to take for granted the fact that the railways would have to pay the tax, but nevertheless was able to speak optimistically. He said that, although the income received by each of the companies would be subject to E.P.T., he could not suppose that any basis would be fixed which would be likely to diminish appreciably the amount available for distribution on the ordinary stock. Lord Stamp, on the other hand, argued strongly against the imposition of a treble tax upon railway profits, which under the financial agreement with the Government, were already restricted further than under the provisions of the 1921 Act and were again curtailed by reason of the arrangement for sharing with the Government. The imposition of E.P.T., he declared, would be in effect a triple limitation of profits which was not adopted with any other class of business, and would be inequitable. The solution he suggested was that the railway companies should pay either E.P.T. or the amount of the share of profits agreed with the Government, whichever proved to be the greater, and he added cryptically, "that may indeed prove to be the ultimate position."

It is the provision in the agreement with the Government for the latter to take one-half of the profits of the railways in excess of £43½ millions a year which places the companies in an unique position in relation to E.P.T. In the case of no other industry has there been adopted a similar plan, which in effect is nothing less than a 50 per cent. tax on profits above a certain level. At their current rate of earnings it is probable that the railways are already ranking for this impost and, as the Government is under the agreement obliged to adjust railway charges so as to cover wartime increases in costs, the railway companies should derive their normal benefit from any increase in gross receipts. Under the Act as it is at present worded, it would seem that the railways have a choice of profits standard for the purposes of the tax of the years 1935, 1936, 1935-37, or 1936-37. On the basis of any of these periods, without some other qualifications, railway earnings appear likely to be such that they would be liable to the Excess Profits Tax. There can be no doubt, however, that the companies would strenuously oppose the selection of any of these periods as affording an equitable basis representing a fair peacetime

level of profits. The net revenues (actual or average) in these periods were respectively £34,000,000, £35,700,000, £35,800,000, and £36,500,000, or at the best some £14,500,000 below Standard Revenue. The disabilities under which the companies had been labouring were, in fact, recognised by the Government by its acceptance of the Transport Advisory Council's recommendations on the Square Deal campaign, although the outbreak of war prevented the promised legislation being passed.

The railways could, of course, appeal to the Board of Referees, and it is interesting to note how wide are the powers wielded by that body. Section 13 (7) of the Act permits the board to decide that "some other figure" may be adopted as a standard; such a figure, in the case of a business carried on by a company, being not more than sufficient to enable the payment of a dividend of 6 per cent. on the ordinary capital. Should a decision on these lines be forthcoming, the effect of liability for E.P.T. would be a matter of small moment for the railways for some time to come. In effect it would mean that the G.W.R. and L.M.S.R. would not pay the tax until within a short step of their Standard Revenues and that the L.N.E.R. and Southern would never have to pay it because their Standard Revenue ceilings prohibit earnings sufficient to attract the impost. This last factor in itself points to an essential difference between the railways and other businesses. It does not lessen the desirability of an early decision as to the liabilities of the railways for E.P.T. An unknown but possibly onerous liability to a tax of this character introduces a factor of unsettlement into operations which could, and should, be swept away. Lack of it leaves an uneasy suspicion that the Exchequer is hoping to gain the best of both worlds, taking first a heavy share of profits as a partner and then descending upon what remains as a taxgatherer.

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"Railway-Associated" Air Lines

DAILY press comment continues to be made on the alleged Government discrimination between the so-called railway group of air transport companies in Great Britain and the "independent" operators. Last week, at page 471, we outlined the position of the two groups and quoted the words of Sir Kingsley Wood, the Secretary of State for Air, that in the requisition of aircraft no favour was being shown to the companies associated with the railways. He pointed out that the Government found it justifiable in wartime to retain only those internal air lines where some national interest was involved, and this principle is being interpreted broadly as applying to routes crossing water with no alternative means of land transport, such as lines connecting England with Belfast, those linking certain outlying places in Scotland, and those serving the Channel Islands. Naturally, the companies previously licensed on such routes have been selected to continue where they had operated in peacetime, and, as we pointed out last week, the fact that railway associates and their friends benefit by the distinction is a tribute to the policy they have consistently pursued of regarding air transport as part of a co-ordinated system of transport, and thus avoiding the establishment of purely competitive air services which in wartime are deemed redundant.

The six companies in the so-called railway group (although not all railway associated) are: Air Commerce Limited, Great Western & Southern Air Lines Limited, Isle of Man Air Services Limited, Olley Air Service Limited, Railway Air Services Limited, and Scottish Airways Limited. This was an arbitrary grouping, for operating

convenience, in the National Air Communications scheme, of companies in which the railways hold shares and others under similar management to the railway associates which it would not be logical to segregate. In two cases there are no railway shareholdings; in two others there is a minority railway holding; in one a 50 per cent. interest; and only in one a railway control. An important place in internal air line operation is occupied by the group headed by British & Foreign Aviation Limited, a private holding company incorporated on June 14, 1938, for the purpose of consolidating certain air transport interests. Substantial shareholdings are held by Sir Hugo Cunliffe-Owen, and the group is associated with the British Electric Traction Co. Ltd., which provides the management and secretarial services. The direct wholly-owned subsidiaries of British & Foreign Aviation Limited are Air Commerce Limited and Olley Air Service Limited; it also owns one half of the capital of Great Western & Southern Air Lines Limited, and, indirectly, other interests:—

AIR COMMERCE LIMITED ... Incorporated December 1, 1934 Subsidiary of British & Foreign Aviation Limited	Engine overhaul for the whole group, and, in peacetime, private charter work.
CHANNEL AIR FERRIES LIMITED ... Incorporated May 8, 1936. Subsidiary of Olley Air Service Limited	By an agreement with the Great Western Railway and the Southern Railway and others, the services of the company were merged with certain interests of Railway Air Services Limited to form Great Western & Southern Air Lines Limited.
GREAT WESTERN & SOUTHERN AIR LINES LIMITED Incorporated December 5, 1938	Capital held by British & Foreign Aviation Limited (50 per cent.), Great Western Railway (25 per cent.), and Southern Railway (25 per cent.).
ISLE OF MAN AIR SERVICES LIMITED Incorporated January 19, 1935	Capital held in equal shares (one third each) by Olley Air Service Limited, the L.M.S.R., and the Isle of Man Steam Packet Co. Ltd.
OLLEY AIR SERVICE LIMITED ... Incorporated January 10, 1934. Subsidiary of British & Foreign Aviation Limited	Undertakes private charter work in peacetime; controls Air Booking Co. Ltd., Channel Air Ferries Limited, and West Coast Air Services Limited; and owns one-third interest in Isle of Man Air Services Limited.
WEST COAST AIR SERVICES LIMITED Incorporated April 3, 1933, as Blackpool & West Coast Air Services Limited; name changed to present one in November, 1937. Subsidiary of Olley Air Service Limited	Joint operator with Aer Lingus Teoranta (of Dublin) of the London—Bristol—Dublin air line at present suspended under the partnership name Irish Sea Airways. The introduction of a West Coast service to Dublin is in prospect.

In view of the extensive road transport partnerships between the main-line railway companies and the British Electric Traction group, the air transport affiliations of the latter are naturally carried on in friendly association with the railways, but the direct railway interests in internal air transport are summarised as follow:—

CHANNEL ISLANDS AIRWAYS LIMITED Incorporated December 12, 1934.	The parent company controlling Jersey Airways Limited and Guernsey Airways Limited. The capital is held in equal shares (one third each) by the G.W.R. and Southern Railway and the Whitehall Securities Corporation.
GREAT WESTERN & SOUTHERN AIR LINES LIMITED Incorporated December 5, 1938	The G.W.R. and Southern Railway each hold 25 per cent. share interests. (See table above.)
GUERNSEY AERO CLUB LIMITED Incorporated April 21, 1934 Owner of the airport at L'Eree, Guernsey	Channel Islands Airways Limited and Great Western & Southern Air Lines Limited hold practically all the share capital.
GUERNSEY AIRWAYS LIMITED ...	Controlled by Channel Islands Airways Limited; works in conjunction with Jersey Airways Limited.
ISLE OF MAN AIR SERVICES LIMITED Incorporated January 19, 1935	One third share interest held by L.M.S.R. (See table above.)
JERSEY AIRWAYS LIMITED ... Incorporated December, 1933	Controlled by Channel Islands Airways Limited.
RAILWAY AIR SERVICES LIMITED Incorporated March 21, 1934	Capital held equally by the G.W.R., L.M.S.R., L.N.E.R., Southern Railway, Coast Lines Limited, and Imperial Airways Limited.
SCOTTISH AIRWAYS LIMITED ... Incorporated August 12, 1937, to operate services hitherto maintained by Northern & Scottish Airways Limited and Highland Airways Limited—both subsidiaries of British Airways Limited	The L.M.S.R. holds a substantial direct interest. In addition, David MacBrayne Limited (in which the L.M.S.R. has a 50 per cent. holding) is a large shareholder.
WESTERN ISLES AIRWAYS LIMITED Incorporated July 19, 1937	Associated with Scottish Airways Limited.

It may be added that the G.W.R. and Southern Railway are associated with the Whitehall Securities Corporation group in the control of Channel Islands Airways Limited (including Guernsey Airways Limited and Jersey Airways Limited). Other air transport companies connected with

the Whitehall Securities Corporation group include Spartan Air Lines Limited, British Airways Limited, and United Airways Limited, and these companies (like those of the British & Foreign group) may be regarded as friendly collaborators of the railways on broad issues, through common directorships, and so forth. The Whitehall group was formerly interested in the air services now in the hands of Scottish Airways Limited, but has recently severed its connection with this undertaking, leaving it in the hands of the L.M.S.R. and associates. A review of the present position of British railway participation in air transport thus shows that the railways have pursued a consistent policy of associating themselves with air lines which they regard as complementary to the general transport system of the country, and that to this end they have become allied with financial, aviation, shipping, and other interests with similar objects.

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The Functions of the R.E.C.

IN the article dealing with the impending rise in railway charges published in THE RAILWAY GAZETTE of March 22, it was stated that the definition of the functions of the Railway Executive Committee had been made the subject of a formula agreed between the companies and the Ministry of Transport. We find that this was premature, for although the matter is under negotiation, no formula has yet been agreed. The necessity for the settlement of a formula was emphasised by Lord Horne at the G.W.R. annual meeting on February 28. He said that the Minister of Transport had intimated that he had no desire to intervene in the day-to-day management of the railways except in so far as might be necessary to secure that they were carried on in such a manner as he thought desirable for the efficient prosecution of the war, including the maintenance of essential supplies and services. Lord Horne added: "As, however, it was an integral part of the Government plans that there should be a community of financial interest between the Government and the railway companies, it was obviously necessary that the powers of the Executive Committee in relation to the companies should be clarified."

Lord Stamp, at the L.M.S.R. annual meeting, went into further detail of the respective parts played by the R.E.C. and the companies. As reported at page 427 of our issue of March 22, he said: "The main lines of policy so far as it affects Governmental requirements and activities, such as the movement of men and war materials, and distribution of essential supplies, are worked out for the railways as a whole by the Railway Executive Committee, which is at the same time the adviser to, and the agent of, the Government. The actual execution of the directions of the Railway Executive Committee is carried out separately by each company through its existing organisation, the officers and staff remaining responsible to their managements and boards as before. Moreover, through its contacts with the Railway Executive Committee, and its sub-committees, each management can report its experience of the working of such decisions and can initiate recommendations for modification or new policy. Although it may have to carry out many orders towards which it remains neutral, the company's organisation is by no means a passive recipient. While theoretically, and in law, the scope of Governmental interference and control is very wide indeed, in practice it will no doubt be confined to matters in which the State, for the prosecution of the war, has a direct interest. The task of your board and its administration is now, therefore, twofold. First, to see that the integrity and smooth working of the machine is so preserved, and its affairs so directed as to carry out as

efficiently and economically as possible all the directions from the Railway Executive Committee as the agent of the Minister of Transport in all those matters in which the Government is concerned. Second, to continue to control, and to control as far as may be possible on commercial lines, all the remainder of its innumerable day-to-day functions in which the Government has no direct interest."

Although the Railway Executive Committee members are the general managers of the main-line railways and the Vice-Chairman of the London Passenger Transport Board, with Sir Ralph Wedgwood, former Chief General Manager of the L.N.E.R. as Chairman, they are at the same time the direct agents of the Government. This dual capacity is obviously one in which the danger of a clash of allegiance must be present in certain circumstances, although there has been no indication of this developing in the seven months during which the committee has been in being. Nevertheless, it would be of very great assistance to the members of the committee to know exactly what their functions are. It is possible that the full realisation of the implications of a divided loyalty will not be apparent until a later stage of the war, or possibly until after the cessation of hostilities. Instances which might be envisaged as placing members of the committee in an invidious position would be provided by desires of the Government greatly to curtail passenger services or reduced fare facilities in order to permit of increased use of the lines for other purposes. These might, in certain circumstances, be carried to such lengths as gravely to imperil the public goodwill of the companies.

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Western Australian Government Railways

THE Commissioner of Railways, Mr. J. A. Ellis, was granted leave of absence as from May 2, 1939, and the report on the working of the Western Australian Government Railways, Tramways, Ferries, and Electricity Supply for the year ended June 30, 1939, is signed by Mr. J. Tomlinson, who was appointed Deputy Commissioner for the period of the Commissioner's absence. Regarding the railways, Mr. Tomlinson points out that conditions adversely affecting markets for wheat and other primary products were chiefly responsible for the decline of £78,707 or 2.14 per cent. in earnings. Despite operating economies effected, working expenses increased by £201,656 or 7.44 per cent., mainly through causes beyond the control of the administration. Interest charges increased by £12,912, and the final deficit of £313,226 compares with a deficit of £19,951 for 1937-38, a year which showed the best results since 1927-28. The net revenue of £687,573 for the year under review gave a return on capital of 2.60 per cent., compared with 3.70 per cent. in the previous year.

Country passenger journeys were 1,229,460, a decrease of 50,181 or 3.92 per cent., and country passenger receipts amounted to £387,717, a fall of £12,384 or 3.10 per cent. Suburban passenger journeys were 10,186,155, a drop of 545,417 or 5.08 per cent., and the suburban passenger receipts of £126,116 were lower by £6,435 or 4.85 per cent. Motorbuses and private cars again contributed to this decrease, which was also materially influenced by trolleybus extensions. First class passenger receipts, country and suburban, totalled £103,583, a decrease of £16,040, and represented 20.16 per cent. of all passenger earnings, compared with 22.46 per cent. in the previous year. Parcels, etc., brought in £153,569, a decrease of £3,161. The main causes of the decline in revenue from goods and minerals have already been indicated. On the other hand fruit railed for export assumed record proportions and

improved receipts to the extent of £26,543. Livestock earnings of £140,130 showed an advance of £2,313. Average ton-mile receipts for goods and livestock were 1.71d. against 1.70d. Some railway operating figures are compared in the accompanying table:—

	1937-38	1938-39
Miles open	4,376	4,378
Train-miles	6,534,855	6,721,453
Ton-miles (paying goods and livestock)	390,912,912	378,089,487
Average haul, miles	127.67	132.24
Passengers	12,011,213	11,415,615
Paying goods, tons	2,948,083	2,743,199
Operating ratio, per cent.	73.68	80.90
	£	£
Passenger receipts	532,652	513,833
Goods and mineral receipts	2,674,947	2,590,377
Total earnings	3,677,850	3,599,143
Working expenses	2,709,914	2,911,570
Net revenue	976,936	687,573
Interest charges	987,887	1,000,799
Net loss	19,951	313,226

Of the increase in working expenses the sum of £160,000 is attributable to basic wage increases and amendments to industrial awards. Fuel cost £18,000 more, mainly because of higher prices, and an additional amount of £9,000 was expended on re-sleeping. The increase from 2,574,420 to 2,826,436 in passenger train-mileage was brought about chiefly by a full year's very satisfactory operation of the six diesel-electric railcars, which had functioned only in the second half of the previous financial year, and by the provision of two extra express trains a week in each direction, which gave a supplementary service for local traffic between Perth and Kalgoorlie on the days that the Westland express was running. Goods train-miles were 3,895,017, against 3,960,435. The construction of six trailers for the diesel-electric railcars was well in hand at the close of the financial year. The vehicles completely fitted with the vacuum brake now number 9,284, representing 83.34 per cent. of the total.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Feed-Water Treatment in Argentina

The Permutit Co. Ltd.,
Gunnersbury Avenue,
London, W.4, March 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—We have read with interest in your issue of March 15 the editorial article entitled "Feed-Water Treatment in Argentina," but must express our surprise at what appears when reference is made to Mr. Topham's paper. This paper was perhaps one of the most important that has been written on the problems of water softening, and yet what appears in your paper gives a complete distortion of what Mr. Topham presented. There were other contributors of course to the discussion, and certain experiences referred to were completely contrary to the facts given by Mr. P. L. Falconer.

Whilst we are fully aware of the history referred to, we should have thought it would have been fairer to your reading public to have given at any rate some other parts of the discussion, rather than leave them with a feeling that base exchange water softening plant is most undesirable.

Perhaps you are not aware that we have now installed more than 150 plants for the F.C.S. and F.C.O., and it must be obvious to anybody that a railway would not have continued to spend year after year a considerable sum of money with this company if the only results to be obtained were

those indicated in your paper under the heading "Feed-water Treatment in Argentina."

Your faithfully,

THE PERMUTIT CO. LTD.,

R. T. PEMBERTON,

Managing Director

Wear of Brake Blocks

London Passenger Transport Board,
Acton Works, Bollo Lane, Acton, W.3
April 1

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In the *Electric Traction Supplement* of your issue of THE RAILWAY GAZETTE for March 29 you quoted in the leading article a figure of 200,000 tons of cast-iron brake blocks used by the L.P.T.B. in a year. An elementary consideration of this figure would indicate that it could not be correct. It would work out, in fact, to a half-inch deposit of cast-iron dust on the tracks, reminiscent of the carpenter's grief in "Alice." The figure should be 4,000 tons, as given in a corresponding leading article of March 31 last year. You may care to correct the figure in your next issue.

Yours truly,

W. S. GRAFF-BAKER,

Chief Mechanical Engineer (Railways)

PUBLICATIONS RECEIVED

The Stock Exchange Official Year Book, 1940. London: Thomas Skinner & Co. (Publishers) Ltd., 330, Gresham House, E.C.2. 10½ in. × 7 in. × 4 in. Pages i-cxxxvi and 1-3617. Price £3 10s. net. Including postage (British Isles) £3 11s. 6d., (Europe) £3 13s. 9d., (U.S.A. and Canada, duty paid) \$25, elsewhere £3 15s. 6d.—In its main features the seventh issue of this Year Book, which incorporates "The Stock Exchange Official Intelligence" and "The Stock Exchange Year Book" in one compact volume, follows the familiar lines of previous editions and provides data indispensable to the investor. Among noticeable additions is the extension of the article on company law so as to include a synopsis of the Trading with the Enemy Act, 1939, and legislation affecting the

conduct of business by trading companies. In the General Information section, a note on the Excess Profits Tax is given. Another new feature, due to the outbreak of war, is a list of emergency addresses of companies, local authorities, registrars, etc., dealt with in the book; the list will be found at the end of the supplement which, as usual, contains information received too late for insertion in its appropriate section.

As in previous volumes, the front portion includes a copious index, lists of members of the London Stock Exchange, the Associated Stock Exchanges, and the Provincial Brokers' Stock Exchange, Chapters on Municipal, County, Indian, Dominion & Colonial, and British & Foreign Finance, a review of the year's legal decisions affecting

companies, and a table showing the rates per £1 at which currency figures have been converted into sterling figures. In the main body of the work, on page 19, will be found a list of securities guaranteed under the Trade Facilities and other Acts. Under the heading "Public Boards" details are given of the London Passenger Transport Board, of the Northern Ireland Road Transport Board, the Railway Clearing House, the Port of London Authority, and other harbour and dock authorities. Information as to the London Electric Transport Finance Corporation and the Railway Finance Corporation appears under "Financial Trusts, Land, and Property." At the end of the section "Railways—Great Britain and Northern Ireland" will be found a concise statement relating to Government control of railways upon the outbreak of war. Working results of the four main-line railways for the years

1930-38 inclusive are given, as well as their investments in other transport undertakings.

The Indian Railway section contains particulars of the working contracts between the Secretary of State and the principal companies, as well as the annuity arrangements relating to railways already purchased. A wide range of companies is dealt with under "Foreign Railways," including Belgian, French, and Italian undertakings, as well as those in South and Central America. In this section are given particulars of Argentine Transandine Holdings Limited and Cordoba Central Trust Limited, but information as to the Ottoman Railway Holding Co. Ltd. appears under "Financial Trusts." British railway interests in associated bus undertakings are set out in the Tramways & Omnibus Section. After the supplement are the usual particulars relating to stamp duties, trustee

investments, income tax, etc., maturity dates of certain debenture and other loans, and lists of statutory and chartered companies.

The Centenary of "Bradshaw."

By Charles E. Lee. London: THE RAILWAY GAZETTE, 33, Tothill Street, S.W.1. 8½ in. x 5½ in. 48 pp. Price 2s. net.—The work of the mathematician and the architect has often commanded the respect and admiration of a nation, and so in a smaller field has that of the timetable compiler, who must possess much of the ingenuity of both. Dull in its conception, confusing in its first appearance, it is strange that his handiwork has not been relegated with the outpourings of statisticians to the mausoleum of the layman's mind. That this is not so is due largely to Bradshaw, who endowed the timetable with a personality. A hundred years ago *Bradshaw's Guide*,

now one of the most famous and typical of British institutions, was born. The celebrations which were to have marked this centenary have been postponed because of the war, but the shadow of calamity has not quite obscured the event, and Mr. Charles E. Lee, whose researches into railway history are deservedly renowned, has placed on record the essentials of *Bradshaw's* inception and history. This little volume is not merely a reprint of Mr. Lee's recent article in THE RAILWAY GAZETTE, but incorporates some further elucidation of points which were still obscure when he wrote it, points brought to light in subsequent correspondence in this journal, including an appreciative letter by Mr. C. Way, the Editor of *Bradshaw's Guide*. Apart from forming a pleasant memento of an important event, Mr. Lee's brochure performs the service of clearing up several matters of long-standing doubt.

THE SCRAP HEAP

The *Sunday Times* on March 17 published a drawing of the Secretary of State's room at the Foreign Office. The architect of the huge Whitehall building which includes the Foreign Office was Gilbert Scott, who, when commissioned, designed a vast Gothic building. Lord Palmerston, though no longer Foreign Secretary, but still a power in the land, would have none of it and insisted on a design in the Italian manner, telling Scott that if left to his own devices he would soon Gothicise the whole country! Rather than refuse the commission, Scott, with a heavy heart, studied the style that Palmerston desired, and produced the building that we now know. He used his first design, incidentally, in a modified form, for St. Pancras station.

build. For Argentina is the one foreign country in the world where England has made herself at home; and all the Lincoln sheep look up, as the 9.28 goes past, bound to all appearances, for King's Cross.—From "*Rag-time and Tango*," by Philip Guedalla.

LORD STAMP'S "RATIONS" FROM AMERICA

Lord Stamp has been amused by a gift which he recently received from a friend in Philadelphia, where apparently rationing in this country has given rise to the idea that everybody is living on bare necessities. The gift consisted of three tins of Portuguese sardines, a small box of Gruyère cheese, a slab of chocolate, a tin of honey, and a small pot of peanut butter. Lord Stamp was touched by his friend's kindness, but has since informed him that Britain has ample supplies of food and that no one goes short. He has had a photograph taken showing the shops packed with groceries and is sending it to his friend in Philadelphia.—From "*The Times*."

WHERE ONLY TRAINS ARE NIL

A formidable British invasion appeared in the early days of railway construction in Argentina. Without a line of rails vast distances were condemned to poverty and isolation. The Pampa was a Sleeping Beauty, waiting in her inaccessible retreat for an obliging prince to awake her; and the magic wand was waved by the first grimy hand that pulled the starting lever of a locomotive. It was a remarkable affair that puffed sedately out of Buenos Aires. The parent of the brood was a Crimean veteran which had tugged little trains of army stores from Balaklava to the British trenches. From these humble origins the invading railways spread and spread, until their tracks veined the whole country like a leaf; and that is why the visitor from home is reassured in some unfamiliar landscape seven thousand miles from Crewe by a railway signal that is a railway signal (and not one of those egregious discs with which foreigners are satisfied) making its Anglo-Saxon gesture to a locomotive of familiar

A striking sidelight on the changed ways of this war is mentioned by a visitor to the emergency headquarters, situated—to quote that much overworked phrase—"Somewhere in England," of one of our great railways. He tells us that within the spacious estate whence thousands of miles of railway are now controlled, practically every form of transport is to be seen; upon the private roads, motorcars, motor-cycles, lorries, horse-drawn carts, and (at the start and finish of work) even double-deck buses run busily to and fro, not to mention the pedalling cyclist and the patiently plodding pedestrian. From their office windows, those who control the destinies of one

of the world's largest railway undertakings may contemplate the internal-combustion "steam"-roller levelling new roads, the mechanical plough digging feverishly for victory, and even the urgent aeroplane winging overhead upon its (fortunately) lawful occasions. From this varied pageant of transport there is only one thing missing, and that is a railway train, but we are told that by proceeding to a certain spot within the grounds, by gazing in a (censored) direction and by waiting patiently, the railwayman who would like to see a train may ultimately be rewarded by a fugitive banner of smoke and steam from the main line—"so near and yet so far."

NORTH EASTERN RAILWAY.

CHANGING OF LINES NEWCASTLE AND CARLISLE SECTION.

TAKE NOTICE,

That on and after MONDAY the 7th day of March, 1864, the Trains on this Section are to run according to the following arrangement, viz.—

Trains from NEWCASTLE to MILTON are to run on the SOUTH LINE
Trains from MILTON to NEWCASTLE are to run on the NORTH LINE.

BY ORDER

Dated this Third day of March, 1864.

Printed by JOSEPH BELL, Railway Book Printing Office, Finsbury Street, Newcastle.

Contrary to established custom, the trains of the Newcastle & Carlisle Railway ran on the right instead of the left hand side of the road, and this practice was continued after the line had been acquired in 1862 by the North Eastern Railway. The date of the changeover, which has erased many railway historians, is shown in the poster we reproduce above

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

NEW ZEALAND

Impressive Workshops Output

During the year 1939 the railways workshops achieved a record output. Altogether, 66 carriages and 1,757 wagons were built, and 21,905 wagons and 2,076 carriages were repaired.

Also 11 new locomotives were built and 385 repaired. In addition, the locomotive service has been augmented by the arrival of several of the 40 "J" class engines ordered from Glasgow. Three new standard railcars were built during the year and 12 passenger cars were fitted with modern air-conditioning apparatus.

The department's workshops at Addington and Wanganui manufactured 4,275 tarpaulins and repaired 18,846 of those in use. But besides the work on locomotives and other rolling stock, large quantities of steelwork and equipment for various other Government departments were manufactured at the railway shops, as well as a great quantity of articles for other branches of the railway organisation. The number of employees on the workshops staff of the railways is now 7,514.

Napier—Wairoa Extension

The heavy development of traffic on this new extension, connecting Napier (Hawke's Bay) with the Poverty Bay district at Wairoa is significant of the scope still remaining in New Zealand for railway development. During the Christmas and New Year holidays 23 extra railcar services and 8 steam trains were put on to augment the normal timetable on a line which has been open for only six months.

Traffic to Eucharistic Congress

Early in February thousands of visitors from all parts of the North Island passed through the Wellington station during the four days of the National Eucharistic Congress, and no fewer than 16 special trains were required to cope with the additional traffic caused by Congress celebrations. The busiest day of Congress week was Sunday, February 4, when 2,500 people arrived by special trains from Masterton, Auckland, New Plymouth, and Wanganui. In addition the ordinary Sunday trains from stations on the Manawatu line were well patronised and were augmented by extra cars. On Friday, when a Mass was celebrated for children, seven special trains brought 2,000 visitors to Wellington for the day, most of them children.

Centennial Exhibition in Wellington

The Railways Department is finding February a month of exceptional passenger traffic following a decision to carry travellers for the Centennial Exhibition at Wellington at fares approximately 20 per cent. below the ordinary scale throughout February. The excellence of the exhibition is now

well known throughout the country, and the concession coming at a time when there is some restriction in the use of petrol, is supplying a strong inducement to those in the more distant parts to make an exhibition trip.

INDIA

Further Details of the Railway Budget

The following are further details of the Railway Budget for 1940-41 presented on February 16 by Sir Andrew Clow in the Central Legislative Assembly, and by Sir Guthrie Russell in the Council of State. The budgetary position of the Indian railways is seen at a glance from the following round-figure table, the figures in it representing lakhs of rupees (Rs. 1 lakh = £7,500):—

			Receipts	Expenditure	Surplus
1938-39					
Revised	...	...	9,466	9,260	206
Actuals	...	...	9,448	9,311	137
1939-40					
Budget	...	...	9,475	9,262	213
Revised	...	...	9,730	9,369	361
1940-41					
Budget	...	...	10,375	9,546	829

The Railway Member reviewed in his budget speech the financial position of the railways in 1938-39, which in event proved less satisfactory than the expectations in February, 1939. Not only were earnings lower than the revised estimates, but working expenses and interest charges were higher. In result, the surplus of Rs. 137 lakhs was very much lower than the contribution due to the general revenues under the convention of 1924.

In the revised estimates for 1939-40, the earnings are put at Rs. 97.75 crores (1 crore = 100 lakhs) against Rs. 94.75 crores in the original budget, an increase due solely to larger movement of traffic since the outbreak of the war. As Sir Andrew remarked, this comparative prosperity is thus dearly bought. The revised estimate of working expenses has been put at Rs. 65.35 crores against the original figure of Rs. 64.25 crores. Taking into account a small decrease in interest charges, the surplus for the year, estimated in February, 1939, at Rs. 213 lakhs, is now revised to Rs. 361 lakhs. Even this increased surplus will fall short of the contribution due to the general revenues by Rs. 90 lakhs, and the deficit is to be carried over for payment out of the surplus for 1940-41.

There yet remain the unpaid contributions for previous years, amounting to nearly Rs. 35.4 crores. In addition, the unrestored borrowings from the Depreciation Fund, amounting to over Rs. 30 crores, stand unreduced. Despite the adverse conditions brought about by the world-wide economic blizzard, during the ten years 1930-39, the average percentage of net traffic receipts to capital at charge on Indian railways has been 3.6 per cent., and

in the last three years it has exceeded 4 per cent.—results which compare very favourably with those of important railway systems in other countries.

Purchase of Hardwar—Dehra Railway

In June last, the Government purchased the South Behar Railway, 76 miles in length, for a sum of about Rs. 92 lakhs, and in January last the Hardwar—Dehra line became State property. The purchase price of this, Rs. 43½ lakhs, will have to be paid during 1940-41. The line is 32 miles long and the return on the investment is estimated at 5.66 per cent. The budget contains no provision for the purchase of the Bengal Dooars Railway, as it is not yet certain whether the price will be paid in 1940-41.

Programme of Works for 1940-41

The programme of works for 1940-41 amounts to Rs. 13½ crores, including the purchase price of the Hardwar—Dehra line. The estimates on account of track renewals amount to roughly Rs. 5½ crores and those for rolling stock to Rs. 5 crores. A sum of Rs. 3½ crores is being provided for bridges and other structural works, and for an increase in stores balances. The policy of retrenchment during the years of depression has resulted in a curtailment of expenditure on maintenance, and for some years to come the expenditure on track renewals and rolling stock is likely to be fairly heavy. As the Pacific Locomotive Committee observed in its report, the tendency to prolong the life of material and postpone betterment until financial conditions improved has been carried quite as far as is reasonable or safe, and lost ground must now be recovered.

After making due allowance for possible savings and lapses in expenditure, a net provision of Rs. 11½ crores is made under open line works, of which Rs. 7 crores will be met from the Depreciation Fund and the remainder debited to capital. The year-to-year increase in the capital at charge has been a source of concern to many legislators, and, to check further over-capitalisation, the Government, in consultation with the Public Accounts and the Standing Finance Committees, came to certain conclusions in 1936, to which effect will now be given. At present new minor works costing up to Rs. 2,000 are debited to revenue, and this limit will be raised as from 1940-41 to Rs. 10,000 in respect of all works on State-managed railways. The change will involve an increase of Rs. 30 lakhs in working expenses. The possibility of introducing this reform in the Government accounts of company-managed lines is being examined.

Increases in Surcharge on Coal

In addition to the increased tariffs [already referred to in our issue of March 22—Ed., R.G.] the existing surcharge on coal, coke, and patent fuel is to be increased from 12½ per cent., with a maximum of Re. 1 a ton,

to 15 per cent. without a maximum, up to October 10, 1940, and 20 per cent. thereafter. The small increase in the coal surcharge up to October 31 is intended to encourage manufacturers to lay in stocks of coal during the slack season when the wagon position is easier.

Final Results

The gross traffic receipts have been put at Rs. 103 crores on the assumption that the traffic will be slightly more than in the current year. Working expenses, including depreciation, are reckoned at Rs. 66.64 crores, an increase of Rs. 1.29 crores over the revised estimate for 1939-40. The interest charges are expected to be lower by Rs. 10 lakhs. The final result, after taking into account miscellaneous receipts (Rs. 75 lakhs) and interest charges, will be a surplus of Rs. 8.29 crores. Of this estimated surplus, a sum of Rs. 5.31 crores will have to be paid to the general revenues in respect of the annual contribution, and the balance of Rs. 2.98 crores put into the Railway Reserve Fund.

UNITED STATES

Chicago—Twin Cities Competition

A further stage has been reached in the competition for the traffic between Chicago and the Twin Cities of St. Paul and Minneapolis by the acceleration, from January 28, of all but one of the high-speed trains on each of the three competing routes. Hitherto the times of these trains have been stabilised at 6½ hr. between Chicago and St. Paul (429.5 miles by the Burlington, 410.5 miles by the Milwaukee, and 408.6 miles by the North Western route), with an additional ½-hr. for the 10.6 miles between St. Paul and Minneapolis, which must be negotiated at low speed. The cut of January 28 was to 6¼ hr. by the Milwaukee 1 p.m. (the Hiawatha), the North Western 3 p.m. (The 400), and the Burlington 3.30 p.m. Zephyr from Chicago, also from St. Paul to Chicago by the 8.25 a.m. and 4.30 p.m. Burlington Zephyrs, the 8.35 a.m. and 1 p.m. Milwaukee Hiawatha services, and the 3 p.m. (The 400) of the North Western; eight trains in all.

Remarkable Acceleration

The most remarkable acceleration has been that of the morning Zephyr of the Burlington, leaving Chicago at 9 a.m., which with eight intermediate stops makes the run of 429.5 miles to St. Paul in 6 hr., at an overall average of 71.6 m.p.h. From East Dubuque to Prairie du Chien this flyer is scheduled to cover the 54.6 miles in 39 min., at 84.0 m.p.h. from start to stop, and this now becomes the fastest booked railway run in the world. It is followed by a timing of 46 min. for the 58.6 miles from Prairie du Chien to North La Crosse (76.4 m.p.h.). In the reverse direction the run between the stations last mentioned is made by the morning Zephyr in 44 min. (79.9 m.p.h.), and by the afternoon Zephyr in 45 min. (78.1 m.p.h.). All the Zephyr trains are diesel-operated.

The 400 of the Chicago and North Western makes seven intermediate stops westbound and six eastbound, the overall average in this case being 65.4 m.p.h. The fastest booking, again allowing 1 min. for stops, is westbound over the 49.9 miles from Evanston to Racine in 39 min. (76.8 m.p.h.); in the reverse direction the 73 miles from Milwaukee to Evanston must be covered in 59 min. (74.3 m.p.h.). Also the 63 miles from Milwaukee to South Beaver Dam are booked in 51 min., at 74.1 m.p.h., and the 61.5 miles from Adams to South Beaver Dam in 50 min., at 73.8 m.p.h. The 400, the first of these competing services to be instituted at the end of 1934, was turned over from steam to diesel haulage last year.

79.6 m.p.h. Start to Stop with Steam

On the Milwaukee route both the eastbound Hiawatha trains, which are streamlined steam-hauled trains, in their overall average of 65.7 m.p.h. from St. Paul to Chicago, make seven intermediate stops, totalling 17 min. on the morning and 15 min. on the afternoon run. Of these two expresses the morning Hiawatha is booked over the 78.2 miles from Sparta to Portage (including 40 m.p.h. slacks on entering the 2½ miles of single track between Raymore and Tunnel City) in 59 min., at an average of 79.6 m.p.h. from start to stop, and this is by an easy margin the fastest booked run in the world with steam. The afternoon train has three extremely fast runs in succession: from La Crosse to New Lisbon, 59.8 miles, in 46 min. (78.0 m.p.h.), New Lisbon to Portage, 43.1 miles, in 33 min. (78.4 m.p.h.), and Portage to Watertown, 46.9 miles, in 37 min. (76.0 m.p.h.). At most of the stops only departure times are shown in the timetable, but in arriving at these averages, stops of 1 min. in each case have been allowed for. The afternoon eastbound Hiawatha is booked to run the 280.8 miles from La Crosse to Chicago in 4 hr. 1 min., inclusive of four stops, one of 3-min.

Trial of Pendulum Cars

Three pendulum type passenger cars, one each for the Santa Fe, the Great Northern, and the C.B. & Q. are being constructed for trial purposes by the Pacific Railway Equipment Company. It is proposed that on completion these cars shall be operated as a single train in experimental services. They will be built on the principles of the initial trial car described in THE RAILWAY GAZETTE of July 22, 1938 (p. 168).

ARGENTINA

Labour Agitation

There has been a revival recently of unrest amongst a section of railway employees, who are again pressing for the repeal of the Presidential Award on the question of the wage-cuts, and it is reported that the matter will be discussed at a joint meeting of the *Union Ferroviaria* and *La Fraternidad*, which is to be held shortly. It will be remembered that the award was ac-

cepted at the time by the companies and the unions, but while the former have scrupulously abided by its provisions, the latter have been continually pressing for its cancellation on the grounds—which are quite untenable—that the financial situation of the railways has since improved to such an extent that the conditions which justified its promulgation in 1934 no longer existed, and that therefore it should be annulled.

In July last year, as the result of a strike on the B.A.P.R., the Government requested the companies and the unions to submit their views in regard to the convenience or otherwise of cancelling the award and modifying the agreements entered into between the parties in 1931, and if so, to make alternative proposals. In their reply, the companies pointed out that the award could not be annulled by any unilateral action on the part of the unions (an opinion which was subsequently upheld by the Attorney-General), and considered that it provided a fair method for enabling the railways to effect economies in times of financial difficulty without adopting the alternative of dismissing surplus staff. In Congress, after an acrimonious debate, the Chamber of Deputies, by a majority of 52 to 42, voted for the abrogation of the award, and the wage agreements made in 1931 were declared null and void.

As nothing further has been done in the matter, the men are again pressing for a decision, and it is thought that the object of the forthcoming meeting between the executive committees of the unions is to decide on the policy to be adopted in the event of the Government lending its support to the companies in the controversy.

ITALY

The Castagna Rail Joint in Service

In November, 1938, the State Railways equipped 300 m. (328 yd.) of track on the Milan-Venice line with the rail-joint invented by Professor Francesco Castagna of Brescia. It is a combination of the skew and scarf joints and its peculiarity consists chiefly in its great length, about 1 m. (3 ft. 3½ in.), which, it is claimed, secures maximum strength and steadiness, and permits of as much as 8 to 10 cm. (3 to 4 in.) of expansion, should this be necessary, as for instance it might be with long welded rails. The running is said to be extremely quiet and smooth, passage over the joints not being noticeable, and the distribution of load to be very even, so that the ballast remains no more compressed near the joint than at other parts of the rail by the passage of traffic. It is further claimed that with 36-m. (118-ft.) rails the cost of fitting the new joint is much less than that of the more numerous ordinary joints used in Italy with rails of usual length, so that economy is combined with better running. Experts recently made an inspection of the trial section and were so favourably impressed that it has been decided to fit a 30-km. (18-mile) section of line on the Venice division.

VICTORIA

Carriage of Wheat in Bulk

Since the inauguration of bulk handling of wheat at Lascelles on November 30 last, more than 2,700,000 bushels had been carried by rail in special wheat-proofed trucks to the great terminal elevator at North Geelong and other destinations by February. Since the season began nearly 11,000,000 bushels of bagged and bulk wheat have been railed. For carriage in bulk 1,255 specially adapted trucks of three different types are available, as well as other ordinary trucks with canvas aprons across the doors.

Three or four trucks an hour can be loaded at country elevators, and each truck can be discharged at the terminal elevator in nine or ten minutes. Tarpaulins are used for the protection of both loaded and empty trucks, as the latter have to be kept dry and clean for reloading.

HOLLAND

Reopening of Intermediate Stations

The Netherlands Railways policy of closing intermediate stations to passenger traffic is being reversed. With the introduction of the summer timetables in May next all wayside stations on the Utrecht-Arnhem section will be reopened, and will be served by hourly electric stopping trains in both directions.

On other sections a number of closed stations have also been opened for soldiers on leave and visitors to camps, etc., and some of these stations may eventually be reopened to all passenger traffic.

Formation of an Institute of Transport

Preliminary steps have been taken for the establishment of an Institute of Transport in Holland, which, it is hoped, will include operators of all transport services in the country and the transport science departments of the universities. Its activities will be largely devoted to transport economics.

Station Improvement Schemes

Ambitious improvement schemes in station layouts, including the elimination of level crossings, have been put forward by the Netherlands Railways for a number of junctions and important stations, the works to be carried out with the aid of Government grants and financial contributions of the towns concerned. The first station to be dealt with is Leyden. Similar works now in course of construction at Utrecht are in an advanced stage.

DENMARK

State Railways Works Programme

It is announced that the State Railways are to spend about Kr. 20,000,000 on improvements in the immediate future. Several stations, including Køge, Naestved, Aalborg, Esbjerg, and Hjørring are to be improved or rebuilt. Permanent way improvements and

widenings are to be carried out between Aarhus and Laurbjerg, Køge and Naestved, Randers and Aalborg, Fredericia and Taulov, Gadbjerg and Give, Fredericia and Aarhus, Hellerup and Klampenborg, and in the main station at Copenhagen. A fourth line is to be added to the present three between Enghave and Valby, in connection with the electrification of the Frederikssund line. Several new power signalling installations are authorised; also loud speaker equipments for Roskilde, Hillerød, and Naestved stations. The central workshops at Copenhagen and those at Aarhus are to be enlarged and modernised and a number of level crossings replaced by bridges.

New Canal

The new Falsterbo canal is expected to be ready by this summer. It cuts across the Falsterbo peninsula, leading from the bay of Kämpinge to Hollviken, in a northerly direction, dividing the railway from Falsterbo to Skanör. This carries very little traffic and is to be replaced by bus and lorry services.

SWEDEN

Recent Power Signalling Installations

Last year the State Railways brought an up-to-date power signalling installation into service at Upsala, the layout connecting with the automatic signalling extending along the line to Stockholm. Power signalling has existed here since 1913, in which year a three-cabin installation of German type—of advanced design for its time—was put into service. There were several level crossings in the vicinity, with gatemen at each, and the signals were of the usual semaphore and disc type standard for many years in Sweden. Shunting was carried out with the aid of point indicators and shunting prohibition signals. The equipment gave very satisfactory service, but the desire to work with smaller staff, to concentrate the working, and to introduce shunt signals similar to those in England and America, led the management to decide upon the installation of a single cabin of the latest type with all-electric locking, controlling the whole area as far as Upsala North. At the same time colour light signals were put in for all running moves and position light shunting signals; this was the practice in all new work, not only in Sweden but also in Norway and Denmark. Movements inside station limits are entirely directed by the shunt signals which are three-position. Certain outlying points are controllable locally as well as from the signal box. There are 13 level crossings with barrier type gates controlled from the box, and no trouble has arisen from this arrangement, which enables considerable savings to be realised.

The Swedish private lines are also adopting up-to-date signalling as rapidly as opportunity serves. The Bergslagen line has installed a very complete power interlocking at Sundyberg, covering a large area and replacing several earlier

signal boxes. The general equipment is similar to that adopted at Upsala, with reversible direction control on some sections of double line to facilitate shunting and empty train movements. Track circuit is installed throughout and the lever frame is of the Ericsson all-electric pattern, as at Upsala. The shunt signals have a fourth or "neutral" aspect, which appears when local movements may be made, not conflicting with any others, under the responsibility of a shunter. This gives a certain amount of flexibility without diminishing the safety of the working.

FINLAND

Lengths of New Line Opened

Two sections of new lines under construction were completed last November and have subsequently been opened for traffic. They are (a) the first 45 km. of the Kontiomäki-Taivalkoski railway, a south-to-north line in the narrowest or north-central part of Finland; and (b) 75 km. of the Varkaus-Viinijärvi line, which when completed will link up the central and eastern lines of railway, and, being about 80 miles north-west of Lake Ladoga, must have been near the fighting front.

SWITZERLAND

Progress of New Works

Contracts have now been made with various Swiss firms for doubling the Sisikon-Fluelen and Taverne-Lugano sections of the Gotthard line, and work will begin shortly on both projects. On the metre-gauge Brünig line, the electrification of which is to be completed by next spring, the enlargement of the Lopper tunnel, between Hergiswil and Alpnachstad, is under way, together with other minor engineering works.

FRENCH INDO-CHINA

Air Services

In the last ten years Indo-China has been served by the world's air routes, and planes on the eastern routes of Air France and Imperial Airways—the latter making only short calls there—land at Hanoi. The Air France machines cover the distance from Hong Kong to Hanoi in 3½ hr. and to Saigon in 5 hr. longer. For a time there was a service *via* Vientiane (Laos) direct to Bangkok and onwards, and Saigon was connected with Bangkok by a branch service. Air France gives a six-day connection weekly each way between France and the colony. In addition, Saigon is connected by the Dutch K.N.I.L.M. services weekly with Singapore and Batavia. The Chinese-German Eurasia and the Chinese-American C.N.A.C. lines maintain a regular service several times a week from Hanoi to Kunming and Chungking, the capital of Chinese China, but permission to fly into China has not been given to Air France. The civil airports of Indo-China are at Hanoi, Tourane, Saigon, and Vientiane, and there are several military landing stations.

LOCOMOTIVE MAINTENANCE, BELGIAN NATIONAL RAILWAYS*

Reduction in man-hours and time of withdrawal from service achieved by reorganisation of workshops and systematic schedule of operations

By A. CHANTRELL

ADEQUATE maintenance of steam locomotives is an operating essential, and has a particular bearing on safety. At the same time, it is of economic importance in ensuring regularity of service and the avoidance of costs arising from breakdowns and delays. There is therefore every justification for efforts to secure its economical performance. Of 55,000 workers employed by the Belgian National Railways Company, nearly 5,000 are engaged on the maintenance and repair of steam locomotives, and important savings have been effected by improvement in methods and organisation.

Former Practice

During the first years of post-war operation, locomotives were distributed between 66 depots varying widely in size and equipment. Running repairs were made at each depot on a day-to-day basis, worn or otherwise defective parts being repaired as discovered by drivers or inspectors, or as damage occurred in service. After a certain mileage, depending on the type of locomotive and the nature of its service, more or less thorough overhaul was effected, the body being lifted and the wheels withdrawn. The object of this intermediate overhaul (*moyenne réparation*) was to take up excessive play and remedy wear in the wheel sets, motion work, and brakes. The work was carried out in a shop adjoining the running shed, according to the practice of the depot concerned and under no well-defined programme. The running sheds, particularly the smaller ones, had only limited resources at their disposal in equipment and personnel, and under these conditions a locomotive was often out of service for two months. The mileage between such overhauls seldom exceeded 30,000-45,000 km. (18,640-27,960 miles), according to the type of locomotive.

After a mileage corresponding to two or three intermediate overhauls and seldom exceeding 100,000 km. (62,140 miles), it was necessary to undertake more extensive repairs to the boiler, cylinders and motion. This work being beyond the capabilities of the depots, the locomotives were taken to one of the six main workshops of the system for major overhaul (*grande réparation*). There, the locomotives were completely dismantled, boilers were thoroughly repaired, and all parts of the frames, cylinders, wheel sets and motion work were examined and repaired as necessary. The labour involved averaged 9,000 man-hours per locomotive, and the time out of service averaged about 70 days.

Present Organisation

The basic principles of the more economical and satisfactory organisation now in operation are standardisation of procedure in all the operations of running repairs, intermediate, and major overhaul, and concentration of the work in a small number of well-equipped shops. Also, it is recognised that for most of the components of a locomotive, there comes a time when it is better to inspect and recondition than to wait for signs of wear or damage. In other words, maintenance should be periodic and protective, wherever damage can be foreseen and for all parts

which are known to wear or to deteriorate in performance after a certain length of service. Working on this principle, running maintenance operations are organised as follows: after from 6 to 10 days' service in the case of express passenger locomotives, according to the nature of the feed water; and after from 15 to 30 days' service in the case of goods and shunting locomotives, the boiler is emptied and washed to remove sludge and other deposits. Advantage is taken of this opportunity to inspect and adjust or repair the fittings, piping, lubricators, brake rigging, and the like.

The interval between two intermediate overhauls, corresponding, as shown later, to about 90,000 km. (55,920 miles) of service in the case of passenger locomotives, is divided into eight equal periods, at the end of each of which the locomotive is subjected to an amount of inspection varying according to a well-defined programme. The principal one of this series of inspections is at the middle of the interval between the intermediate overhauls, i.e., after 45,000 km. (27,960 miles) running. It occupies about one week and includes the complete inspection of pistons, valves, and their accessories, and the taking-up of play in the wheel sets and motion work. At the quarter and three-quarter stages in the period between intermediate overhauls, when the locomotive has run 22,500 km. (13,980 miles) after the overhaul and the main mid-period inspection respectively, there is an inspection which includes examination, cleaning and repair of essential parts and those affecting safety. Finally, at the $\frac{1}{4}$, $\frac{3}{4}$, $\frac{5}{4}$, and $\frac{7}{4}$ points in the 90,000-km. (55,920-mile) interval, i.e., beginning at 11,250 km. (6,990 miles) after a more thorough examination, there is an inspection restricted to the small number of parts requiring such frequent attention. In order to avoid extra withdrawals from service, all of these inspections coincide with boiler washing.

The central office and the superintendents of the existing 56 running sheds see that all the operations of running maintenance are carried out punctually and in strict accordance with the programme, so that the advantages sought are fully realised. Some unforeseen maintenance is, of course, always required to repair accidental damage, and this is carried out in accordance with predetermined methods and a regular daily programme.

After a certain period of service, the locomotive shows general wear which no longer permits it to be kept in service with satisfactory regularity and economy. Thorough repair is needed by the treads and flanges of the tyres, the bearings, pivots, etc., of the wheel sets, the motion work, brake gear, firebox, and so on. For this the locomotive is subjected to intermediate overhaul, not in the running sheds but in a workshop specially equipped to deal with the type of locomotive concerned, and in accordance with an established programme, uniform for the whole of the system and based on modern methods of workshop organisation and practice. All the small repair shops, formerly maintained at depots, have been abolished. As explained later, the major repairs have been concentrated in two central workshops, the equipment of which is able to deal with a great part of the

* Extracted from *Le Rail*

intermediate repairs, thus combining, for many types of locomotives, the two classes of repairs in a single workshop, an ideal arrangement as regards the quality of repairs. The remaining intermediate repairs are dealt with in three other workshops, entirely independent of the running sheds and each specialising in a certain number of types of locomotives. As regards the decision of the moment at which a locomotive should be taken in hand for intermediate overhaul, the wear on tyres and motion work depends on the number of revolutions of the wheels or, which comes to the same thing, the number of strokes of the pistons, or the mileage traversed, allowing for the diameter of the driving wheels. It can therefore be said that a locomotive of a particular type should be given an intermediate overhaul after running a certain minimum mileage, varying from one type to another according to the diameter of the driving wheels. This distance is, at present, 90,000 km. (55,920 miles) for passenger locomotives, with driving wheels of from 1·8 to 2·0 m. (5 ft. 11 in. to 6 ft. 6½ in.) dia.; 70,000 km. (43,500 miles) for locomotives intended for mixed and goods service, with driving wheels of about 1·5 m. (4 ft. 11 in.) dia.; and 50,000 km. (31,070 miles) for shunting locomotives, with driving wheels of 1·2 m. (3 ft. 11¼ in.) dia.

Savings Effectuated

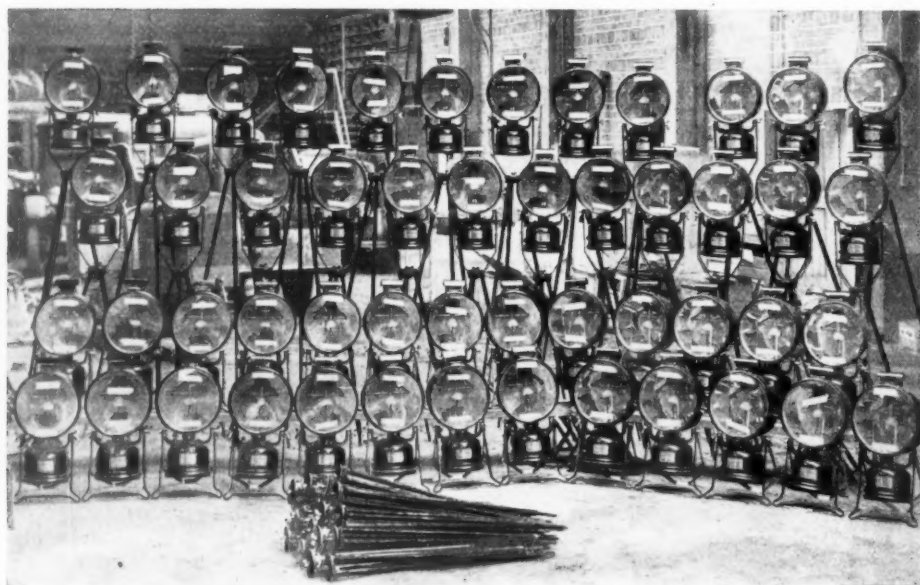
Naturally, there is no question of keeping in service until the minimum mileage has been reached, any locomotive which has an unduly heavy fuel consumption, or which is subject to frequent damage by abnormal wear and therefore expensive in maintenance. Such cases are now very rare, and the actual mileage between intermediate overhauls averages 10 per cent. more than the minimum values mentioned above. Comparing these results with those of the former organisation, the mileage between intermediate overhauls has been more than doubled. The quality of repairs has thus been considerably improved, and at the same time the expenditure of labour in man-hours has been reduced by one-third, and the period of

withdrawal from service has been reduced to an average of 11 working days.

Formerly, major overhauls (*grandes réparations*) including repair of boilers, frames and cylinders, were carried out in six central workshops. The organisation of this work in accordance with modern methods, combined with that of intermediate overhauls and general maintenance, quickly resulted in doubling the interval between major overhauls, which now averages more than 200,000 km. (124,270 miles) of service. Also, the man-hours of labour for complete overhaul now averages 4,400 hr., or less than half the amount formerly required, whereas the quality of the repairs is now much higher. Further, the reduction of the period for complete overhaul to an average of 21 working days liberates much space in the workshops and enables all the major overhauls and a considerable part of the intermediate repairs to be undertaken in the two central workshops at Malines and Salzinnes, decreasing overheads and lowering the cost of repairs.

All the company's locomotives are thus subjected to a regular cycle of maintenance and repair, and apart from the longer periods between, and the shorter withdrawals from service for overhauls, there has been effected 20 per cent. reduction in the man-hours required for maintenance work. The total cost per train-kilometre, at present amounting to about fr. 32 (37s. 6d. per train-mile, at 27·50 fr. = £1), includes only 6·6 per cent. for locomotive maintenance and repair, compared with the former figure of 10 per cent. For comparison, the fuel cost is now about 12 per cent. of the total cost per train-mile. As regards regularity of service, statistics show that the number of stoppages of main-line passenger trains attributable to steam locomotives has been reduced from about 1 per cent. to less than 0·1 per cent. of the number of trains in service. For the traffic now worked, this corresponds to an average of one delay *per diem* of more than 10 min. attributable to any defect or irregularity in the locomotives engaged.

Lights for Permanent Way Work



A battery of 50 floodlight projector FL 6 lamps recently supplied by the Tilley Lamp Company of Hendon to the Canadian National Railways for use on permanent way work. It will be noted that some are mounted on short stands and others on tripod stands; the latter give an elevation of 8 ft above ground level. More than 1,600 of these lamps have now been supplied to the four main-line British railways as well as to the railways in India, Australia, and other parts of the British Empire. The photograph was taken in Montreal.

ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

Sickness among Transport Workers

THE wave of winter ills, no doubt in part due to the exceptionally severe weather, and heightened by the prevalence of influenza in the first two months of this year, was felt with particular severity in the north of England. An enquiry which *The Manchester Guardian* has conducted among representative firms and public bodies shows that transport and postal workers suffered heavily. Bolton Transport Department at one time had 70 per cent. of its staff absent through illness, and it was estimated that up to the time of the enquiry 12,750 working hours had been lost. To maintain services a seven-day week was worked, and members of the indoor and maintenance staffs were put on the road to drive and conduct the cars during the peak traffic periods. The Preston Transport Department had to call up its women conductors, who had been trained and were being held in reserve against wartime emergency. The Manchester Transport Department had the highest total and the highest percentage of sickness casualties in the history of the department. To meet the situation holidays were deferred, additional duties were taken over by the men at work, the engagement of new entrants, normally left to the spring, was brought forward, and some of the services were reduced.

Italian Interurban Road Services

WE have received from the Italian Ministry of Communications a recently-issued volume of statistics of interurban public motorcar services for the years 1935 and 1936. The following table gives particulars of interurban motorcar services which have replaced services on certain privately-owned railways in recent years:—

Railway displaced	Date closed	Date of opening road service	Length of road service km.
Massa Marittima-Follonica Porto (25½ km.) ...	1.2.33*	1.2.33	20
Mandela-Subiaco (22½ km.) ...	11.12.33	21.12.33	25
Rovereto-Arco-Riva (28½ km.) ...	1934†	18.11.33	33
Civiale-Caporetto (28 km.) ...	1.8.32	1.8.32	27
Villa Santina-Comegliano (14 km.) ...	31.12.35	1936	14
Castelbolognese-Riolo Bagni (9½ km.) ...	31.12.33	1.1.34	10
Fiuggi-Frosinone (33½ km.) ...	1.7.35	1935	38
Fano-Fermignano (43½ km.) ...	1.1.33	1.1.33	55½
Dermulo-Fondo Mendola (23½ km.) ...	1.2.34	1934	26½
Aquila-Capitignano (31½ km.) ...	16.10.35‡	15.10.33	38

* Passenger service discontinued.

† Passenger service partly discontinued.

‡ Passenger service discontinued 14.10.33. Line closed 1935.

Except where otherwise stated the closures of railways were complete. The total length of railways closed for all traffic or for passenger train traffic is 259½ km., and the total length of substituted road services is 287½ km. The length of interurban tramways closed is 1,307½ km., and the road services provided in substitution have a length of 1,569½ km. Further tables show the development of interurban road motor services between 1931 and 1936, exclusive of those opened in substitution for withdrawn State Railway services. The respective route lengths of these road services were: in 1931, 101,856 km.; in 1932, 99,567 km.; in 1933, 99,139 km.; in 1934, 97,963 km.; in 1935, 102,354 km.; and in 1936, 98,178 km. The bus-kilometres run in 1935 were 90,746,151 km., and in 1936 were 93,589,888 km. Receipts on these services from passengers, luggage, parcels, etc., were 145,730,853 lire in 1935 and 173,657,887 lire in 1936, and the number of passengers carried was 42,085,599 in 1935 and for an average distance of 12.24 km., and in 1936 was 51,177,747

for an average distance of 12.81 km. Total expenses in 1935 amounted to 184,626,512 lire, giving an operating ratio of 127 per cent. For 1936 expenses were 207,237,744 lire, the operating ratio being 119 per cent.

Buenos Aires Transport

ACTING on the recommendation of the control board of the City of Buenos Aires Transport Corporation, the Minister of the Interior has issued a decree authorising a reduction in the valuation of the assets of the various transport companies, involving a corresponding cut in their respective share capital in the corporation. The aggregate amount of the reductions, which have been accepted by all the companies concerned, amounts to some \$17,394,000 paper. The biggest reduction is that made in the case of the Anglo-Argentine Tramways Company, the recognised capital of which has been reduced by nearly 12 million pesos. The comparative figures of each of the concerns affected are as follow:—

Companies	Original valuation \$ Paper	Revised valuation \$ Paper
Anglo-Argentine Tramways ...	210,167,301	198,187,172
Lacroze Tramways ...	36,026,999	32,400,433
Lacroze Underground ...	62,975,751	61,849,244
Town & Docks Tramways ...	10,064,242	9,807,585
Southern Electric Tramways ...	7,640,557	7,236,477

The total value of the assets of these companies has thus been reduced from \$326,874,850 to \$309,480,912, and the fact that there will be no interest or amortisation on the difference will entail a saving during the life of the corporation's concession (56 years) of some \$73,000,000 paper. The revised valuation is based on various factors, including wear and tear of the rolling stock and installations up to the date on which the corporation took over the services (February 17, 1939), and, by fixing the value of the assets, the corporation will now be in a position to complete the legal formalities attaching to the transfer. In the case of the C.H.A.D.O.P.Y.F. company, no adjustments have yet been made, as some of its lines are still under construction.

The time limit within which the *colectivos* (micro-buses) were required to come under the control of the Buenos Aires Transport Corporation expired on January 31. As a result of negotiations between Dr. Carlos Acevedo, Chairman of the corporation, and the owners of the *colectivos*, it has been announced that the corporation has acceded to their demands for payment to be made in cash instead of in shares, in accordance with the provisions of the corresponding Government Decree. The sum involved is about 31 million pesos, and it is stated that the Government proposes issuing a series of debentures to the value of 60 million pesos, of which 15 millions will be placed locally and the remainder abroad. The Government has placed the matter in the hands of the control board of the corporation, under the chairmanship of Engineer Justiniano Allende Posse, one of the Government's two nominees on the board, for consideration. The Government's final decision will be based on the committee's report, which will be considered in conjunction with an examination of the economic and administrative problems related to the launching of a \$15,000,000 internal loan. Dr. Acevedo informed the *colectivo* owners that the expropriation proceedings which had been initiated on the expiry of the time limit fixed by the Government would

be suspended, if the owners immediately signified their intention of accepting and abiding by the regulations of the corporation.

Dublin Buses Replace Trams

THE Chairman of the Dublin United Tramways Co. (1896) Ltd., Mr. James MacMahon, was able to present his stockholders with an account of progress achieved under difficulties when he met them in annual meeting on March 26. Despite political uncertainties over many months, culminating in the outbreak of war last September—so near a neutral as Eire cannot escape its repercussions—and the prevalence of unofficial strikes by the company's employees, the undertaking pressed ahead with the conversion from trams to buses. Last year it constructed in its own works and put into service 112 double deck buses, bringing the total fleet to 318 vehicles. It is also making constant improvements in the design and comfort of the vehicles. Tickets sold last year totalled 154,341,576 as against 155,221,384 in 1938, but in this connection it has to be borne in mind that the introduction of cross-city services has reduced the number of tickets sold without curtailing the actual number of passengers carried. This is reflected in the increased average passenger fare, which was 1.820d. as compared with 1.797d. in 1938. But for the war and the consequent rise in prices of essential materials, the board had hoped to reduce fares last year. The Chairman made an interesting point on the difference between the Road Tax on buses in Dublin and in London. A 56-seat bus in Dublin pays £186 13s. 4d. against only £86 8s. in London.

"Public Service" in New Jersey

AN order for 242 buses, consisting of 108 diesel-mechanical and 134 diesel-electric, has been placed recently by two of the operating units of the Public Service Corporation of New Jersey, namely, Public Service Co-ordinated Transport and Public Service Interstate Transportation Company. This large order has been given to General Motors Truck & Coach, a division of the Yellow Truck & Coach Manufacturing Company. In addition, the Public Service organisation plans to convert this year 100 petrol-electric buses to diesel-electric operation; this work will be done in the company's own Newark shops. Of the new diesel-mechanical buses, 66 will seat 23 passengers; 15 will seat 27; and 27 will accommodate 29. The lightweight transit-type 23-seater will be equipped with a small diesel engine mounted transversely in the rear. Another feature of the small transit-type bus is the short wheelbase which makes it possible to manoeuvre quickly and easily through traffic. Of the diesel-electrics ordered, 30 will be of the 37-seat type, and the remainder of 27-passenger capacity. These diesel-electrics will have engine and generator mounted transversely in the rear. The engine will be driven by a single electric propulsion motor instead of two motors as in the petrol-electric buses. Electric drive provides smooth acceleration without the necessity of shifting clutch or gears; the operator controls the bus merely by pressing the foot pedal. The 37-seat buses will be equipped with a new type of electric coasting brake which has been designed to eliminate noise and excessive heat. The bodies of all the buses will be constructed of aluminium and steel. Interior features will include dome lighting of modernistic design on all buses, and velour upholstered seats in buses destined for suburban service. During 1938, Public Service Co-ordinated Transport purchased 125 diesel-electric and 169 transit-type buses, and converted 83 petrol-electric buses into all-service vehicles in the company's shops. Including the present order of 242, the company has bought a total of 917 new

buses for use on its various routes since January 1, 1937. With the delivery of this order, Public Service Co-ordinated Transport will have a total of nearly 500 diesel-engined buses, the largest fleet of its kind in the U.S.A. The Public Service organisation also operates 600 all-service vehicles, the only fleet of its kind in the world. These vehicles are capable of being used either as trolleybuses, taking the current for their electric motors from overhead wires, or as self-contained units, with petrol or diesel engines serving the electric motors which supply the final drive.

Western Australian Tramways and Trolleybuses

THE Western Australian Government Tramways, which operate in the metropolitan area in and around Perth, have been controlled by the Commissioner of Railways since 1914 when 8 miles 26 chains of double line and 14 miles 69 chains of single line were in operation. In the year ended June 30, 1914, the number of passengers carried was 10,700,915 and the receipts were £116,774. In 1933 an existing tramway route from East Perth, through the city of Perth, to West Leederville, a suburb on the western side, was converted into a trolleybus route, and further conversions on some of the longer routes, such as Claremont, were decided upon in 1936. An extension to Wembley from West Leederville was opened in February, 1938, and the Claremont route was opened on June 12, 1938. The Commissioner's report for the year ended June 30, 1939, shows that the length of tramway open at that date was 17 miles 2 chains double line and 18 miles 76 chains single line, as compared with 17 miles 4 chains and 20 miles 29 chains, respectively, at June 30, 1938. The length of trolleybus routes, on the other hand, has increased from 10 miles 68 chains to 11 miles 63 chains double line, and from 2 miles 5 chains to 2 miles 10 chains single line. This increase is attributable to the opening of the Floreat Park extension and additional loops at Leederville and at Perth railway station. Trolleybus earnings increased from £12,817 in 1937-38 to £56,005 in the year under review, working expenses advanced from £10,733 to £44,104, and net revenue from £2,084 to £11,901. Interest charges increased from £948 to £4,233, leaving a balance of £7,668, against £1,136. The increased figures for 1938-39 were due mainly to a full year of operation on the Swansbourne route. The total number of passengers carried by tramways and trolleybuses was 31,498,234 in 1938-39 against 30,166,084, and the gross earnings from the two services amounted to £301,179, an increase of £15,332, due to the extension of the trolleybus system. Tramway gross earnings in 1938-39 were £245,174, a decrease of £27,856.

The Road Fund Report for 1938-39

WAR conditions delayed the preparation of the Road Fund Report for the year ended March 31, 1939, and it was published only on March 18. As stated in a prefatory note, the war has resulted in the drastic revision of future programmes, but the report records a substantial volume of work actually carried out in the year under review. The total length of public roads in Great Britain is now over 180,000 miles, of which some 4,500 miles are trunk roads, 23,000 other class I roads, nearly 18,000 miles class II roads, and 135,000 miles unclassified roads, the last including residential streets in urban areas and numerous country lanes. The total shows an increase of some 900 miles on the previous year's figure, an increase almost wholly in classified roads. Payments out of the Road Fund, totalling some £20,000,000, included £4,345,000 for trunk roads, £15,888,000 grants to highway authorities for other roads, £285,000 for police

(traffic) expenditure, and £70,000 for research and experiments.

On trunk roads, some £2,600,000 was paid to highway authorities who act as the Minister's agents for maintenance and minor improvement works, and £1,460,000 for major improvements, more than half of which amount represented expenditure on schemes which were in hand when the roads became trunk roads on April 1, 1937. Numbers of the larger schemes of trunk road improvement in various parts of the country are detailed in appendices to the report. Many of the schemes included dual carriageways, footpaths, and cycle tracks. Nine by-passes and diversions, four of which were the subject of Orders in the previous year, were opened to traffic during the year. In the case of numerous schemes, work on which has since been postponed owing to the war, the line of the route has been safeguarded by Orders of the Minister or by acquisition of land, against "development" which would interfere with the improvement of the road at a later date. For roads other than trunk roads, payments to highway authorities in the year were £15,888,000, much of this in respect of grants made in previous years. The grants made in the year were £20,629,000, of which figure £7,420,000 was for maintenance and minor improvement; £12,489,000 for major improvements and new construction; and £719,000 for establishment charges of surveyors to local authorities, traffic signs, and so forth.

Another appendix details other road improvements completed during the year (including such items as the Mickleham by-pass, costing £125,000, and the Penistone by-pass, £140,000), numerous reconstructions of weak bridges, and the mileage of new roads opened to traffic. Damage due to the storms of August, 1938, is recorded in several places. New installations of traffic light signals during the year numbered 114. Pedestrian crossings now number 32,000. At March 31, 1938, the 30 m.p.h. speed limit operated on some 41,500 miles. The number of driving tests conducted by the Ministry of Transport examiners during the year was 432,000, bringing the total number of tests since the passing of the Road Traffic Act, 1934, to 1,396,000. The percentage of failures in the year was 37.5 per cent.

South African Road Transport

THE eighth annual report of the Central Road Transportation Board, constituted under the Motor Carrier Transportation Act of South Africa, 1930, covers the period between April 1, 1938, and March 31, 1939. The Chairman of the board, Mr. James Young, retired on July 15, 1938, and Dr. Hjalmar Reitz was appointed his successor. The headquarters of the board are at Pretoria, but there are ten local boards functioning in the transportation areas fixed by the Act. Most of the meetings of the central board at centres other than Pretoria were in respect of appeals against decisions of local boards. Of the 33 appeals lodged, 7 were upheld, 14 dismissed, 2 partly upheld, and 10 withdrawn. For the year 1938, 7,181 motor carrier certificates were issued, of which number 1,164 were for passenger vehicles, 1,859 for dual-purpose vehicles, and 4,158 for goods vehicles. Certain temporary certificates and exemptions were also issued. In the Cape-town zone the changeover from bus and tram to trolleybus was achieved much sooner than had been expected. Under the joint arrangement with the certificated services of the Railway Administration, 19,764 passengers were carried to favourite picnic spots. Illegal taxi competition has diminished and natives appear to have become more "bus-minded." Since the last revised Proclamation, No. 1 of 1936, and in response to repeated requests from the Railway Administration and other carriers, the schedule of transportation routes has been amended and the revised

schedule is published. It is now realised that, unless a road is proclaimed as a transportation route, the board is unable to protect private carriers against competition from newcomers. The efforts of the board are directed towards avoiding wasteful duplication. The report describes certain amendments which experience has shown to be advisable for the equitable operation of the Act. As in previous years a summary is given of the reports from the local boards. According to the traffic returns in the appendix, the number of passengers carried under certificates issued by the board during the year was 104,582,056, compared with 98,094,995 in 1937, an increase of 6,487,061, or 6.6 per cent. The total weight of goods traffic carried aggregated 3,383,997 tons, an increase of 907,719, or no less than 36.6 per cent. The revenue of the board for the year amounted to £30,759, and the expenditure was £26,473.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Colonel Crompton's Contribution to Transport

The Hall, Wivelsfield Green,
Sussex, March 16

TO THE EDITOR, ROAD TRANSPORT SECTION

SIR,—The keynote of Colonel Crompton's contributions to the problems of transport was sounded by him so far back as 1870. In that year he presented a Memorandum to the Government of India in which he wrote:—

"The subject of road locomotion has not had reasonable attention paid to it because it was considered that the railways having superseded the early efforts of Hancock and others, would in future take the place of roads, which would then play a very secondary part."

As much of his subsequent career was devoted to restoring roads and road transport to the position which he deemed they should hold relatively to the railways, it was generous of THE RAILWAY GAZETTE to pay in the issues of February 23 and March 8 such appreciative tributes to my old friend.

That selfsame Memorandum (written in 1870, please remember) also referred to "the reduction of the wear and tear of highway which must follow from the use of elastic tyres." It was this vision of possibilities which, when conjoined with his engineering experience and inventive powers, carried Colonel Crompton so much further in achievement than men deemed to possess sounder judgment and greater organising ability.

He pursued his visions with enthusiasm. I recall our attempts to find a cure for the dust nuisance which in the first decade of the present century threatened the progress of road transport. I had organised "a competition for the best tar spreading machine and the best preparation of tar for road purposes." It was held in May, 1907. Colonel Crompton acted as one of the judges and threw himself into that competition confident that our vision of dustless roads could be realised.

Later under the Road Board—1910-18—we were able officially to co-operate to reduce the rolling resistance of the existing roads and to make the surfaces pleasant to travel upon. Our hopes of providing a modern system adequate and safe by building new roads scientifically designed we could not realise. Perhaps the railway interests (whose views are so ably presented in THE RAILWAY GAZETTE) were mainly responsible for the fact that the Road Board powers itself to build and maintain new roads were never used; but that is another story. I am sure, however, that if we had been permitted to design and build new roads for motor traffic on a large scale, the same inventive ingenuity which Colonel Crompton showed in other directions would have been forthcoming to give this country new roads safe to use and adequate for the country's needs.

I am, etc.,

W. REES JEFFREYS

Road Haulage Wages

AS from January 29, 1940, the remuneration to be paid to road haulage workers employed in connection with "A" and "B" licences was fixed by an Order issued by the Minister of Labour & National Service and, under a separate Order the Minister brought into operation from the same date the provisions of the Road Haulage Wages Act, 1938, relative to transport workers employed in connection with "C" licences. The rates of pay in England and Wales are as follow :—

A—Workers whose home depot is situated in the London Area.

(i) Drivers of vehicles other than steam wagons and other than all types of tractors :—

Age of worker	Carrying capacity of vehicle	Remuneration a week
Under 21 years (see also "All ages" below)	Of 10 cwt. or less :—	
	First year's employment in the trade ...	37s.
	Thereafter ...	42s.
	Over 10 cwt. and up to and including 20 cwt. :—	
21 years and over	First year's employment in the trade ...	42s.
	Thereafter ...	47s.
All ages	Under 1 ton ...	59s.
	Of 1 ton ...	63s.* 69s.†
All ages	Over 1 ton and up to and including 2 tons ...	67s.* 68s.† 73s.* 74s.†
	Over 2 tons and up to and including 5 tons ...	77s.* 78s.†
	Over 5 tons ...	

* These rates apply to drivers whose employment commenced after June 8, 1932.
† These rates apply to drivers in employment as such on June 8, 1932, who have remained in the service of the same employer.

(ii) Drivers of steam wagons and all types of tractors ... 77s. A week

(iii) Drivers of vehicles with trailer attached :—

Drivers of all types of vehicles with trailer attached shall be paid 6d. per day over the rates specified, except on articulated vehicles without additional trailer or trailers, or a single trailer attached to a tractor used only as a drawing vehicle.

(iv) Statutory attendants and mates :—

Mates on steam wagons ... 64s.
Statutory attendants and mates (18 years of age or over) other than workers under 21 years of age employed as vanguards and other than mates on steam wagons ... 62s.

B—Workers whose home depot is situated outside the London Area, other than those to whom the long distance services rates apply.

(i) Drivers :—

Age of worker	Carrying capacity, or gross laden weight, of vehicle	A week		
		Grade 1	Grade 2	Grade 3
Under 21 years of age (see also "All ages" below)	Of 30 cwt. or less :—			
	First year's employment in the trade ...	37s.	34s. 6d.	32s.
	Second year's employment in the trade ...	42s.	39s. 6d.	37s.
	Thereafter ...	49s. 6d.	47s.	44s. 6d.
21 years of age or over	Of less than 30 cwt. ...	55s. 6d.	52s.	48s.
	Of 30 cwt. ...	60s. 6d.	57s.	53s.
All ages	Over 30 cwt. and up to and including 2 tons ...	60s. 6d.	57s.	53s.
	Over 2 tons and up to and including 3½ tons ...	65s. 6d.	61s. 6d.	57s. 6d.
	Over 3½ tons and up to and including 12 tons gross laden weight ...	68s.	64s.	60s.
	Over 12 tons gross laden weight ...	73s.	69s.	65s.

A week		
Grade 1	Grade 2	Grade 3

(ii) Statutory attendants and mates (21 years of age or over) ... 59s.

(iii) Attendants (18 and under 21 years of age) other than workers employed as vanguards :—

First year's employment in the trade ... 37s. 34s. 6d. 32s.
Second year's employment in the trade ... 42s. 39s. 6d. 37s.
Thereafter ... 49s. 6d. 47s. 44s. 6d.

C—Workers on long distance services.

Drivers of vehicles under 2 tons carrying capacity ... 63s. A week
Drivers of vehicles of carrying capacity of 2 tons and up to and including 12 tons gross laden weight ... 68s.
Drivers of vehicles over 12 tons gross laden weight ... 73s.
Statutory attendants and mates (21 years of age or over) ... 59s.

D—Haulage of agricultural produce.

Workers to whom the grade 3 rates apply, and who are engaged exclusively in hauling from a farm in a grade 3 locality to any place within a grade 3 locality agricultural produce originating from the farm, may be paid 10 per cent. less than the appropriate grade 3 rate of wages, provided that the rate as thus reduced shall be not less than 48s. a week.

The rates of pay in Scotland up to May 5 are those applicable to Grade 2, and thereafter the whole of the foregoing rates will apply.

Night Work.—Employment between 10 p.m. and 4 a.m. is to be paid at 2d. an hour above the appropriate rates of wages.

Vehicles Loaded or Unloaded in Higher Graded Places.—

The worker is to be paid for the whole journey at the highest rate of wages applicable to the class of vehicle at any of the points where he picks up or sets down, or if employed on long distance services, at the rate applicable thereto, except that a vehicle from a depot outside, which picks up or sets down inside, the London Area, the Grade 1 rate or the rate applicable to long distance services shall be paid.

Guaranteed Week.—A regular worker is to be paid a week's wages in respect of any week in which he has worked for the employer and has performed some road haulage work.

Overtime.—Overtime is defined as follows :—

(a) Regular workers :—

Time worked by a milk worker in excess of 7 hours, or by any other regular worker in excess of 10 hours, on any day other than Sunday, and time worked in excess of 48 hours in any week.

(b) Other workers.

Time worked in excess of 8½ hours on any day from Monday to Friday and in excess of 5½ hours on Saturday.

(c) All workers.

Time worked on Sunday by milk workers in excess of 6 hours, and all time worked on Sunday by other workers.

Payment for overtime is to be as follows :—

(a) Regular workers :—

On any day (other than Sunday) ... Time-and-an-eighth.
For the first 8 hours of overtime in any week (exclusive of Sunday) ... Time-and-an-eighth.
After the first 8 hours of overtime in any week (exclusive of Sunday) ... Time-and-a-quarter.
On Sunday (other than a milk worker) ... Double time.
On Sunday (milk worker) ... Time-and-a-quarter.

(b) Other workers :—

On any day (other than Sunday) ... Time-and-a-quarter.
On Sunday ... Double time.

Subsistence.—An allowance of 5s. in respect of every period of rest away from home not exceeding 14 hours. Where the period of rest exceeds 14 hours, the worker is deemed to be on duty for a minimum period of 5½ hours and paid accordingly.

Holidays.—In England and Wales six Bank Holidays and in Scotland six days, to be agreed between the employer and the worker, are to be allowed with pay. A week's annual holiday with pay is also to be allowed to every regular worker who has been continuously employed for not less than one year.

Immediately after the issue of the Road Haulage Wages Order, the trade unions submitted to the Central Wages Board an application for an increase in wages, and formal notice of the proposals to increase the statutory remuneration of road haulage workers employed by "A" and "B" licensees has now been given by the Central Wages

Board. The proposed increases are: 5s. a week on the rates for the London area, long-distance, and Grade 1; 4s. on Grade 2, and 3s. on Grade 3, with half these amounts for juniors, and an increase of 1s. in the amount of the subsistence allowance. Objections to the proposals must be lodged with the Central Board within 21 days after March 1.

The Emergency Committee of the Central Wages Board has approved the following arrangements between the parties:—

In the case of long-distance services, the Metropolitan area,

and London, it was agreed that the increases should operate from the first full pay period after Monday, March 4.

In the case of Southampton and South Wales (Grade 2 portion), it was recommended that the parties should meet locally and agree to the first full pay period after March 4 as the date of operation for the increases.

In the case of the principal parts and towns other than those mentioned, it was recommended that the parties should forthwith meet locally with the object of fixing a date of operation, which shall in no case be later than April 1.

If in any district no settlement has been arrived at meantime, the increases shall be operative on the first pay day after April 1.

British Railways and Passenger Road Transport

AN interesting feature of the annual accounts of the four main-line railway companies in recent years up to and including 1938 has been that section of Account No. 8 (Revenue Receipts & Expenditure of the Whole Undertaking) which shows the return on the capital invested in the numerous passenger and freight road transport concerns with which the railways have become associated since 1928. By Order of the Minister of Transport, the accounts for 1939 have been published in a greatly restricted form in consequence of the Government control exercised in view of the war. As, however, the dividends from investments in other undertakings are items outside the terms of the financial arrangements with the Government, they appear for 1939 in Account No. 8 in much the same form as in previous years. On the passenger side, the railways have large direct shareholdings in 33 of the principal road transport undertakings operating

in the provinces, details of which are given in the accompanying table. The profitable nature of these investments is indicated by the high return secured last year. The G.W.R. has investments totalling £2,300,133, which yielded a return of £228,515, or 9.93 per cent. compared with 9.17 per cent. in 1938; the L.N.E.R. secured a return of £402,739 on its investment of £2,437,124, namely 16.53 per cent. compared with 14.22 per cent. in the previous year; and the L.M.S.R. investment of £3,067,488 returned £409,708, or 13.36 per cent. compared with 11.30 per cent. in 1938. The Southern Railway Company has over £2,000,000 invested in passenger road transport undertakings; as these are not charged to capital expenditure the details are not given in the annual accounts, but by the courtesy of the Chief Accountant, Mr. R. G. Davidson, we are enabled to include particulars of the nominal holdings and earnings.

RAILWAY SHAREHOLDINGS IN PASSENGER ROAD TRANSPORT AT DECEMBER 31, 1939, SHOWING EARNINGS FOR THE PAST YEAR

Associated Company	Issued Share Capital	L.N.E.R.		L.M.S.R.		G.W.R.		S.R.	
		Holding	Earnings	Holding	Earnings	Holding	Earnings	Holding	Earnings
Aldershot & District Traction Co. Ltd. ...	200,000 Ord. ...	£	£	£	£	£	£	£	£
W. Alexander & Sons Ltd. ...	450,000 Ord. ...	50,000	47,500	50,000	47,500	—	—	82,721	6,618
	450,000 6% Part. Pref. ...	175,000	—	175,000	—	—	—	—	—
Birmingham & Midland Motor Omnibus Co. Ltd. ...	1,440,000 Ord. ...	—	—	432,000	63,000	288,000	42,000	—	—
	100,000 8% Cum. Pref. ...	—	—	—	—	113,000	12,469	—	—
City of Oxford Motor Services Limited ...	225,000 Ord. ...	—	—	—	—	—	—	—	—
	74,000 6½% Cum. Pref. ...	—	—	—	—	—	—	—	—
Crosville Motor Services Limited ...	1,100,000 Ord. ...	—	—	412,071	32,966	137,357	10,988	—	—
Cumberland Motor Services Limited ...	150,000 Ord. ...	—	—	49,999	7,294	—	—	—	—
Devon General Omnibus & Touring Co. Ltd. ...	200,000 Ord. ...	—	—	—	—	40,917	5,115	27,279	3,410
	150,000 7% Cum. Pref. ...	—	—	—	—	—	—	—	—
Eastern Counties Omnibus Co. Ltd. ...	756,000 Ord. ...	184,089	21,181	25,282	2,909	—	—	—	—
	200,000 5% Cum. Red. Pref. ...	—	—	—	—	—	—	—	—
Eastern National Omnibus Co. Ltd. ...	900,000 Ord. ...	225,000	20,769	225,000	20,769	—	—	—	—
East Kent Road Car Co. Ltd. ...	450,000 Ord. ...	—	—	—	—	—	—	151,355	12,108
	200,000 6½% Cum. Pref. ...	—	—	—	—	—	—	—	—
East Midland Motor Services Limited ...	250,000 Ord. ...	83,333	8,974	41,667	4,487	—	—	—	—
East Yorkshire Motor Services Limited ...	300,000 Ord. ...	149,362	22,979	—	—	—	—	—	—
Hants & Dorset Motor Services Limited ...	550,000 Ord. ...	—	—	—	—	—	—	—	—
	150,000 6½% Cum. Pref. ...	—	—	—	—	—	—	—	—
Hebble Motor Services Limited ...	120,000 Ord. ...	15,000	2,250	45,000	6,750	—	—	—	—
Highland Transport Co. Ltd. ...	35,000 Ord.* ...	—	—	17,500	1,094	—	—	—	—
Lincolnshire Road Car Co. Ltd. ...	200,000 Ord. ...	63,929	6,393	15,985	1,599	—	—	263,492	29,643
Maidstone & District Motor Services Limited ...	750,000 Ord. ...	—	—	—	—	—	—	—	—
	200,000 6½% Cum. Pref. ...	—	—	—	—	—	—	—	—
Northern General Transport Co. Ltd. ...	831,081 Ord. ...	365,767	36,575	—	—	—	—	—	—
	300,000 6½% Cum. Pref. ...	—	—	—	—	—	—	—	—
North Western Road Car Co. Ltd. ...	750,000 Ord. ...	124,444	18,155	248,888	36,310	—	—	—	—
Ribble Motor Services Limited ...	1,200,000 Ord. ...	—	—	530,445	53,044	—	—	—	—
	200,000 6½% Cum. Pref. ...	—	—	—	—	—	—	—	—
Scottish Motor Traction Co. Ltd. ...	1,341,305 Ord. ...	335,326	41,271	335,326	48,217	—	—	—	—
	1,000,000 6½% Cum. Pref. ...	—	—	106,863	—	—	—	—	—
Southdown Motor Services Limited ...	750,000 Ord. ...	—	—	—	—	—	—	242,792	24,279
Southern National Omnibus Co. Ltd. ...	542,200 Ord. ...	—	—	—	—	—	—	271,100	20,854
Southern Vectis Omnibus Co. Ltd. ...	115,000 Ord. ...	—	—	—	—	—	—	57,500	7,245
	15,200 6% Cum. Pref. ...	—	—	—	—	—	—	15,000	—
Thames Valley Traction Co. Ltd. ...	250,000 Ord. ...	—	—	—	—	85,191	9,220	36,510	3,951
Trent Motor Traction Co. Ltd. ...	540,288 Ord. ...	75,147	7,511	150,293	15,023	—	—	—	—
United Automobile Services Limited ...	1,627,233 Ord. ...	798,412	113,273	—	—	—	—	—	—
	150,000 7% Cum. Pref. ...	39,622	—	—	—	—	—	—	—
Western National Omnibus Co. Ltd. ...	2,000,000 Ord. ...	—	—	—	—	1,000,000	116,308	—	—
	400,000 6% Cum. Pref. ...	—	—	—	—	400,000	—	—	—
Western Welsh Omnibus Co. Ltd. ...	507,500 Ord. ...	—	—	—	—	253,750	32,415	—	—
West Yorkshire Road Car Co. Ltd. ...	787,500 Ord. ...	195,843	28,571	195,843	28,571	—	—	—	—
	200,000 6½% Cum. Pref. ...	—	—	—	—	—	—	—	—
Wilts & Dorset Motor Services Limited ...	120,000 Ord. ...	—	—	—	—	—	—	30,724	4,482
Yorkshire Traction Co. Ltd. ...	437,500 Ord. ...	107,289	14,499	107,289	14,499	—	—	—	—
	24,350 7% Non-Cum. Pref. ...	4,661	—	4,662	—	—	—	—	—
Yorkshire Woollen District Transport Co. Ltd. ...	528,000 Ord. ...	88,000	12,838	176,000	25,676	—	—	—	—

* Highland Transport Co. Ltd. shares are 17s. The L.M.S.R. holds 17,500 ordinary shares

Dutch Rail and Road Goods Services

Co-operation with a general transport concern and local carriers is working successfully

DURING recent years a well-arranged system of co-operative working has been set up between the Netherlands Railways and the associated road undertakings of Gend and Loos (an old-established firm of carriers) and the A.T.O. (*Algemeene Transport Onderneming* = General Transport Undertaking), providing a comprehensive network of services throughout the Netherlands, in certain localities in conjunction with local hauliers. There is a service of fast freight trains every night, affording through connections to and from neighbouring countries, and road transport serves for collection and delivery. This division of work enables the road services to be run with relatively light types of motor vehicle and even in a large measure with horse drawn ones.

Before these arrangements were made, there were complaints from the public due to the railways administration concerning itself solely with station-to-station services. The present system aims at organising door-to-door working, comprehensive through charges, quicker transport, and lower rates. It dates from 1933, when co-operation with the road services was begun in earnest. A great improvement is that convenient transport has been given to places some distance from stations, by setting up regular goods lorry feeder and delivery services, which are being extended continually; the present route length is about 5,300 km. (3,293 miles). In the Flanders, Texel, and Beveland districts, water communication is worked in association with the motor routes, at inclusive charges, removing the comparative isolation of some of these parts.

Fears have been expressed for the fate of the local carrier and haulier as a result of the development of the A.T.O. concern, but the policy has been to use the facilities existing locally, if at all possible. Local carriers generally have a good knowledge of the needs of a district and possess friendly relations with business circles, which it is both advisable and fair to turn to account. This has been done, therefore, and about half the routes are run by agreement by local carriers, who, in 1938, performed a very high percentage of the mileage run. Some towns of considerable size are being served in this way. Out of 775 agency offices, some 550 are managed locally. At the beginning of 1939 there were in service 563 horses and 467 horse vehicles, and 457 motor vans. The number of consignments in 1938 was 1,885,752, weighing over 60½ million kilogrammes; in 1932 there were only 218,338 consignments.

An arrangement has now been in force for some years whereby the handling of the entire freight of a firm can be undertaken, for a minimum period of a year, at a special standard rate per 100 kilogrammes. All customs and other formalities being attended to, the firm is relieved of all trouble and anxiety. This has proved increasingly popular, the number of firms participating having multiplied by nine in seven years. More recently a container service has been introduced, as described in the *Road Transport Section* of THE RAILWAY GAZETTE for March 10, 1939, page 417, and this has also proved highly satisfactory.

Overseas Notes

New Seine Bridge Opened

A new bridge across the River Seine at St. Cloud was opened on March 18, two months before its scheduled date. It provides Paris with a new motor road exit to the west.

A Highway in the Rockies

The Columbia Icefield Highway which connects Jasper National Park and Banff National Park will be officially opened for traffic on Dominion Day, July 1. The highway has been open from Jasper to the Columbia Icefield for the past two summers.

Yunnan-Burma Highway

The average daily tonnage now said to be passing over the 960-km. Yunnan-Burma highway is 600 tons. The Chinese Government is appropriating \$12,000,000 for the improvement of this road, so that it may be kept open throughout the rains without serious interruption.

The Roads of French Indo-China

Indo-China has an area of 284,900 sq. miles, 72,722 sq. miles greater than that of France. The French population numbers about 46,000, and the total populations of the largest towns are Saigon 300,000, Hanoi 124,000, Haiphong 122,000, and Pnom Penh 100,000. Unlike China, really modern roads appeared before railways. In 1913 the celebrated *routes coloniales* had a length of 2,012 km. (1,250 miles), in 1938 they totalled 16,600 km. (9,942 miles). There are also many other roads which are satisfactory for motor vehicles only in the dry season. The total length of the highways is about 35,000 km. (21,748 miles) used by some 20,000 motor vehicles annually, over which the tonnage conveyed in 1938 was 5,900 tonnes. The *routes coloniales* are not very wide but

are far superior to most of the roads in China. Their strategic importance is obvious, and they serve the considerable export traffic using the ports of Haiphong in Tonking and Saigon in Cochin-China, which were used in 1937 by 7,325 vessels. There are also several other ports, among them Cam Ranh, now being made into a naval base. Rice, rubber, coal, pepper, varnishes, maize, and fish are the chief exports, with some coffee and cement. Indo-China stands third, next to Burma and Siam, as a rice exporting country.

Co-ordination in Northern Australia

The co-ordinated road and rail service established by the Commonwealth Railways administration between the North Australia Railway and Alice Springs began on April 5, 1939. Between that date and June 17 some 210 tons of merchandise were carried to the railway. Many difficulties had to be overcome in providing this facility, but the service has been favourably received by pastoralists and the venture is felt to have justified itself.

New Road Motor Station in Hamburg

Hamburg has become, in recent years, the centre of extensive motor lorry and bus services run by the Reichsbahn, and an up-to-date service station has now been provided. Some difficulty was experienced in finding a site from and to which vehicles could run without touching the main traffic centres. The space occupied measures 8,200 sq. m. (9,807 sq. yd.) and is triangular in form. It fronts a road about to be widened, and has railway siding connection. The buildings include a set of offices, garage space for 47 vehicles (lorries and buses), petrol and diesel oil reservoirs and pumps, workshops and repair shed and an instruction room for drivers. The workshop contains a large assortment of the latest machine tools and accessories and a welding plant. There are some living rooms for staff requiring to stay over at the depot, with recreation and other amenities. An extension to accommodate 60 more vehicles is in contemplation.

Town Planning and Local Traffic

International Congress at Stockholm, and an account of the present position and proposals for that city

THE seventeenth International Housing & Town Planning Congress took place in Stockholm from July 8 to 15 of last year. It was attended by delegates from 39 countries, and was followed by study tours in the Scandinavian countries occupying the ensuing week.

One of the three subjects on which reports had been prepared was "Town Planning and Local Traffic," and two days were spent in discussion arising out of these reports. The General Reporter on this subject was Landesrat R. Niemeyer, President of the German National, Regional, & Town Planning Academy, who, with the assistance of some 18 reporters in the various countries, had prepared 230 printed pages of matter for consideration. Stress was laid by many reporters on the effect of the policy of transport undertakings on the form of town development, and many illustrations emerged to show that whereas the effect of road development is to create a ribbon growth, the provision of good rail services in advance of development fosters the much more desirable "nucleated" form of suburb or satellite. There was wide agreement that there was considerable benefit to the public in the dispersion of dwellings into healthier surroundings made possible by modern means of transport, and many pointed to the advantage of flat-rate fares for this purpose.

Attention was given in the reports to the co-ordination of the several transport undertakings serving an urban region and to their liaison with the regional planning authority. It appeared that the co-ordination effected in London by the L.P.T.B. and the Standing Joint Committee was unexcelled in any city examined in the reports but, as was pointed out in the contributed report by Mr. Frank Pick and emphasised during the discussion by Mr. W. H. Gaunt, there is no regional planning authority for Greater London, either in existence or in prospect, and there is therefore no possibility of realising that liaison which is known to be necessary.

Various reporters (Belgium, Denmark, and Germany, among others) pointed out that the disadvantages of the railway system, which arise mostly from the barriers it presents to the street system, are more than counter-balanced by its usefulness; and most of them (Italy being a notable exception) assign it a position of prime importance for intra-regional passenger traffic as well as for long-distance work. The importance of good situation for stations, particularly for local and regional passenger traffic, was stressed by Germany, whose reporter also suggested that the main-line passenger stations should be within a mile of the centre. For very large cities most reporters felt that it was justifiable to have a number of main-line stations, and the General Reporter pointed out that the lines from them should be as nearly radial as possible, circumferential lines being restricted to goods lines outside the town area. Goods stations, too, should not be over-centralised in the great cities.

Perhaps the most striking point of similarity between reports from different European countries was the number of cases in which tramway systems are being converted into urban electric railways first by their prolongation into the new outer suburbs on an independent formation clear of the streets, and then by the construction of subways under the congested streets of the centre and inner suburbs to take the cars from groups of routes to the city. This point could be further studied in the exhibition of

Scandinavian town planning which had been arranged in connection with the Congress, for, besides Stockholm's advances in this direction, similar work has been carried out in Oslo and is proposed for Gothenburg. In Oslo the electric light-railways leading north-westwards to (1) Holmenkollen, and Frognersæter; (2) Sognsvatn; and (3) Røa were some years ago extended underground from Majorstuen to the National Theatre, thus enabling the cars to do in 4 min. a journey which formerly involved 11 min. on the street tramway. Extensive improvements are now being made on this line where the three routes diverge, a complete system of burrowing junctions being provided in addition to elimination of a road level crossing, provision of a new underground station, and extensions to the car depot. The Norwegian Government in the summer of 1938 appointed a committee, under the chairmanship of Mr. Granholm, the former General Manager of the Swedish State Railways, to investigate and report on the question of a new Central station for Oslo and other matters relative to a comprehensive scheme for dealing with the suburban and main-line railway traffic at Oslo. In THE RAILWAY GAZETTE of August 6, 1937 (page 235), a proposal was described for extending the Holmenkollen tunnel from the National Theatre to a new Central station, to cater for traffic on most of the suburban-line railways both to the east and west of Oslo, and for a new main-line diversion to the north of the town by which main-line trains from the west could be brought into the new Central station.

In Gothenburg it is proposed to construct a rapid transit line to take care of the east-west traffic, as this is the direction in which the distances are greatest, and to extend this line to the north side of the river, leaving the main southern suburbs to the ordinary tramways and operating buses merely as feeders. Other towns in which somewhat similar developments are in hand or under active consideration include Prague, Nuremberg, and Lodz.

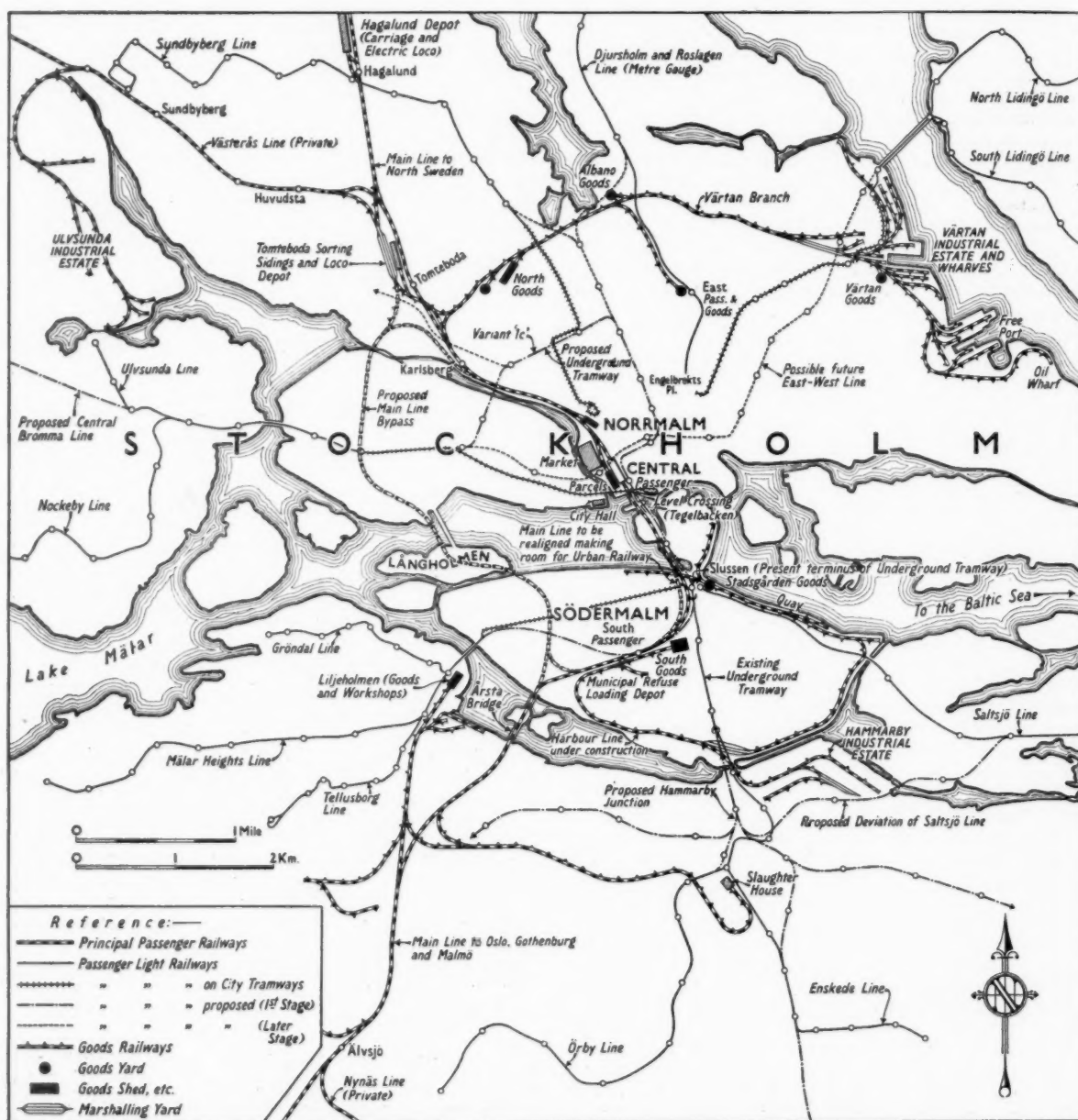
The position in Stockholm is illustrated by the accompanying map. Eleven standard-gauge suburban light railways radiate from the city, together with one narrow gauge line, and all except one (the Saltsjö Line) traverse the streets to some extent to reach the city. The Enskede and Örby Lines were in 1933 diverted into a new tunnel under the congested streets of Södermalm and now accomplish in three minutes a journey which formerly took at least eight over the tramlines. The Town Planning Office, under the direction of Dr. Albert Lilienberg, has developed schemes for linking up all these suburban light railways (and other projected routes) by a system of underground lines, and the route which has been recommended to the City Council (the so-called "Variant 1c") is shown on the map. This proposal is linked with those for the redevelopment of the commercial centre of Lower Norrmalm, in connection with which an international town-planning competition was held in 1932.

The proposed line would follow the route of the existing main line of the Swedish State Railways from the Central station to the famous "traffic machine" at Slussen*

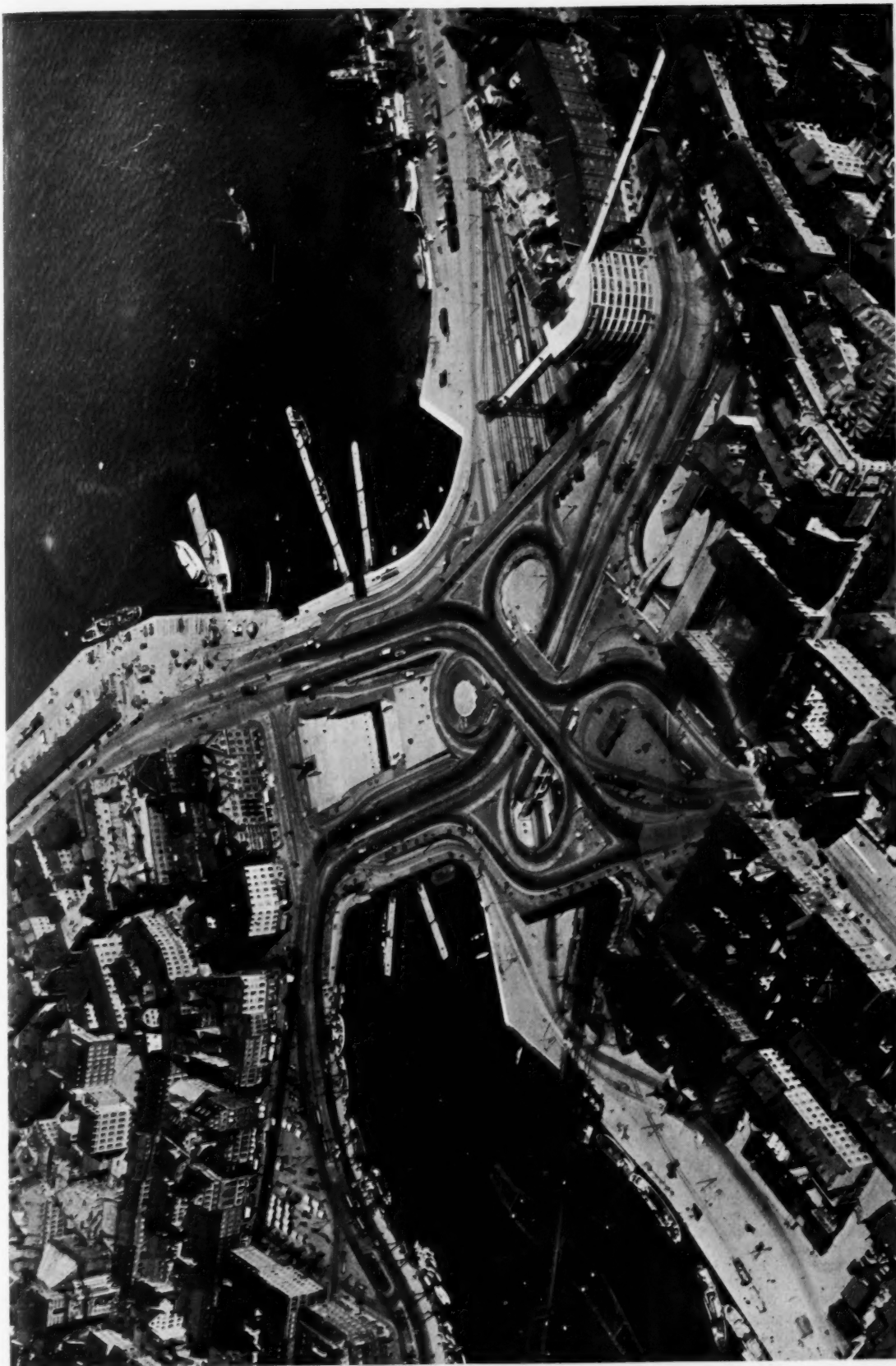
* The "traffic machine" consists of a clover-leaf junction where four main roads meet, augmented to give access, by burrowing junction, to three secondary roads. Under this are two electric light-railway stations at right angles to each other, the State Railways main line, the harbour railway, a nest of 7 sidings, a canal with locks, a network of pedestrian subways, and various garages, shops, etc.

(illustrated herewith), necessitating realignment of the main line at various points. The details of the exchanges of strips of land between the municipal and railway authorities have been negotiated. One of the most difficult problems in the planning of Stockholm is the future of the level crossing at Tegelbacken, immediately south of the Central station, where the main line to Gothenburg and Malmö (also carrying the trains of the privately-owned Nynäs Line) crosses the main road from Stockholm to the west. About 25,000 vehicles traverse this road every day, including 1,100 trams, and the barriers are lowered daily for about 280 trains and for certain shunting movements at the station which foul the crossing. There is a narrow by-pass road running under the railway alongside the crossing, but with a headroom of only 8 ft. 5 in. it is not of much value.

Large numbers of schemes have been devised for the provision of an overbridge at this point, but it is regarded as essential that whatever is erected should not interfere with the view from Lower Norrmalm of the City Hall, of which Stockholmers are justifiably proud. This fact, coupled with the operating disadvantages of working through the Central station all the freight trains between the Southern and Western main lines and the Tomtebodas marshalling yard and North goods station, caused attention to be given to the provision of a suggested new railway from the north end of the new Årsta bridge to near Tomtebodas, the Central station being converted into a stub terminus. It now appears more probable, though, that a compromise will be adopted, embodying the re-alignment previously referred to, a lowering of rail level at the Central station and Tegelbacken, and the construction of



Map of Stockholm showing existing and proposed railway and tramway systems



The Slussen cloverleaf road junction and traffic centre in Stockholm. The main line of the Swedish State Railways is seen crossing the arm of the Mälar on the left, and the loop terminus of the underground tramway is in the centre foreground. A notable feature on the right is the footbridge crossing Katarinavägen to the roof of Katarina House giving access to the lift from the quay

the proposed urban railway *below* the waterway of the adjacent Strommen.

Among the most interesting plans from the railway point of view was that for the proposed station and flying and burrowing junctions at Hammarby, where it is intended that five double lines should converge to form one double line, Örby trains reversing in a bay with platform interchange to and from through trains, the whole being devised so that at no point will the paths of trains intersect on the level, while even convergent trains will at least have a clear run into a platform line.

A noticeable and praiseworthy feature of recent suburban development in Stockholm is that around the light-railway halts, about half a mile apart, community centres with shops, schools, etc., are laid out and every garden suburb is planned to develop about this nucleus. Where possible these units are prevented from coalescing

by the reservation of a buffer strip of the natural forest. Nearly all the land in the suburbs belongs to the municipality, which also has the controlling interest in the tramway company.

Of the two other subjects discussed by the congress one, "The Housing of Special Groups," is not of transport interest, while the other, "The Administrative Basis of National and Regional Planning" is not directly of concern to railwaymen, although it is of some interest to observe that many reporters from Continental states mentioned railways as one of the few activities in which effective national planning had already been achieved. The discussion was, however, concerned principally with the political question of achieving the benefits of central co-ordination without losing the advantage of local effort.

The next congress is planned for 1941, and will probably be held in Los Angeles.

Road Transport and the War—7

Minister of Transport and fuel rationing—L.M.S.R. signal box for road traffic control—Steel for road motor manufacturers—Producer-gas and alternative fuels—Policies for grouped motor goods vehicles

CERTAIN sections of the road transport industry in Great Britain have always regarded the Government efforts in recent years towards transport co-ordination as something approaching road transport elimination, and the wartime changes which have tended to divert goods traffic from road to rail are looked upon as an unfair hastening of the process under cover of emergency conditions. To clarify the position, Captain Euan Wallace, the Minister of Transport, took the opportunity of his presence at the 36th anniversary luncheon of the Commercial Users Association (held at the Savoy Hotel on March 5), to outline the Government attitude. In terms which were quoted verbatim at page 386 of our March 15 issue, he said that his first objective was to lay, once and for all, the bogey of a purely railway-minded Ministry of Transport. Much of the suspicion in the road transport industry that there was at present some official bias in favour of the railways, sprang, he felt, from the fact that in wartime conditions traffic which was ordinarily carried by road transport with efficiency and despatch was inevitably transferred to rail. This transference had nothing to do with any personal bias of the Minister or his advisers, but was due solely to the fact that, whilst the railways operated upon indigenous coal, road transport relied almost entirely upon the use of imported fuel, much of which had to be paid for in "hard currencies."

The Minister of Transport on Fuel Rationing

There was only one limiting factor to the use of road transport in wartime, he said, and that was the amount of fuel available. A limited amount of fuel was allotted by the Mines Department to the Ministry of Transport for the use of commercial road transport, both goods and passenger, and the sole object of the Ministry was to use every gallon of this fuel to the best possible advantage. The scheme adopted for the allocation of fuel might not be perfect, and, if a better one could be produced, it would be not only considered but adopted. The present scheme, however, had the merit of having been prepared in consultation with the Road Transport (Defence) Advisory Committee, a body which represented all interests concerned in the transport industry, including those of organised labour. The object of the scheme was to secure that the available fuel was made to carry not merely the maximum tonnage of goods but the maximum tonnage of those particular goods which either could be carried only by road transport or which, in the interest of the national war effort, were better carried that way. A piece of administration which affected 200,000 operators owning 500,000 vehicles was bound to give rise to some inequalities and to some justifiable complaints, but every complaint of hardship or unfairness was carefully investigated, and adjustments made so far as was possible within the four corners of the general

scheme. Assurance had been given by the Secretary for Mines that, unless some unforeseen change took place, there was no reason to expect any reduction in the amount of imported fuel allowed for road transport.

Post-War Licensing

The position of licence holders after the war was another subject dealt with by the Minister of Transport, who said he fully understood the natural anxiety of hauliers to know how they would stand in regard to carrier's licences. One thing worse than uncertainty, however, would be for the industry to be fobbed off with a promise which the Minister of Transport had no authority to give and which his successor would have no power to implement. Under the 1933 Act, from which all goods transport licences derived, Parliament set up licensing authorities and an appeal tribunal entirely independent of the Minister of Transport. The most he could say in these circumstances was that, in his view, the fact that a person had been the holder of a carrier's licence at the outset of war in respect of a certain tonnage of vehicles would stand in his favour in the case of his making application to the licensing authority at the end of the war for the inclusion on his licence of a similar tonnage.

Driving in the Blackout

The Minister of Transport concluded his remarks by paying tribute to the way in which all concerned in operating road transport had played their part during the past six months, and more especially the actual drivers of road transport vehicles. He had done a certain amount of driving in the blackout in order to satisfy himself as to the wisdom or otherwise of imposing a lower speed limit in built-up areas, and he appreciated from driving cars at least something of the strain of driving heavy road transport vehicles either for passengers or for goods. "For the moment," he said, "the natural effect of the inclination of the earth's axis, supplemented by the introduction of summer time, will give all these heroes some welcome relief during the months that are immediately ahead of us. But I am not one of those who believe that we can settle with the Nazis before next winter, and I can assure you that the difficulties of blackout working are fully appreciated by the Government and we propose to continue our researches to see whether conditions, subject of course to the over-riding needs of national defence, cannot be further ameliorated as time goes on."

Railway's "Signal Box" for Road Traffic Control

The unusual feature depicted in the accompanying illustration is that of a "signal box" built and operated by a railway company for the control of road traffic only. This



"Signal box" control for road traffic on the private approach road leading to the wartime headquarters of the L.M.S.R. at Watford

control point is situated on the private approach road leading to the wartime headquarters of the L.M.S.R. at The Grove, Watford, at a point where there is a narrow hump-backed bridge over water, and where only a single file of vehicular traffic is permitted. As will be seen, the design of the structure is not dissimilar to that of a small railway signal box, with the orthodox flight of steps leading up to it. The Stop and Go indications are supplemented at night by red and green lights, and the box is operated by an L.M.S.R. police officer. The white-painted boarding, to facilitate night driving, will be noted.

Steel Distribution

Steel required for motor vehicles, trolley vehicles, and gas producers for motor vehicles comes within the new Government scheme for the distribution of supplies which was brought into force by administrative Order on April 1. Section 7 of this Order says:—

- (a) The Ministry of Transport will allot a tonnage of finished steel for Home Civil Requirements, and the Board of Trade in respect of exports.
- (b) Finished Steel Producers will only accept orders for finished steel which bear either the symbol of the Ministry of Transport or the Board of Trade, with reference numbers and period numbers with tonnages for each period.
- (c) No licence from the Iron & Steel Control will be required.

Alternative Fuels

Six committees have been set up by the Government to investigate in detail the fuel problem, particularly the use of home-produced substitutes for imported fuels. The fields being covered by the six committees are:—

- (a) The production of oil from coal by synthetic processes.
- (b) The products of low-temperature carbonisation.
- (c) Liquid products of high-temperature carbonisation.
- (d) Alternative fuels for internal-combustion engines.
- (e) The use of colloidal fuel.
- (f) The more efficient use of fuel generally.

A report has been received by the Ministry of Mines that already crude benzol was being recovered at an estimated rate of 15,000,000 gal. a year and that an extension of voluntary effort should bring another 12,000,000 gal. a year.

Producer-Gas Fuel

Attempts have been made within the past month to justify the extraordinary increase in the price of producer-gas fuels, principally on the grounds that fuel to meet the specification of the Ministry of Mines Committee involves exceptional selectivity and a high capital expenditure on the provision of pit-head bunkers. Circulars issued by Amalgamated Anthracite Collieries Limited, Low-Temperature Carbonisation

Limited, and Suncole (Nottingham) Limited, indicate that a price of 90s. a ton has been fixed for gas-producer fuels up and down the country, and whether the delivery point is adjacent to the pit-head or a long distance from it. There is no essential reason why these special types of mineral fuel should be used, particularly as some operators experience difficulty in getting them, and several commercial road vehicles have been operated successfully on fuels of more ordinary specification and price.

Gas Fuels

Trials are being made in Manchester with a double-deck bus running on a fuel comprised of 90 per cent. compressed coal gas and 10 per cent. fuel oil. The mixture is carried in five cylinders at an initial pressure of 3,000 lb. per sq. in. The arrangement is such that the engine can run on diesel oil whenever necessary. Claims have been made that the fuel cost is 0.6d. a mile. Conversion of the power equipment was undertaken by a subsidiary of the United Kingdom Gas Corporation, which controls 52 gas undertakings in Lancashire and Yorkshire.

The technical paper on Alternative Motor Fuels read by Dr. C. M. Walter before the Royal Society of Arts on February 28 produced a good discussion, which is published in the latest issue of the society's *Journal*. Among the more important points raised were the availability of more charcoal than was generally realised, the difficulties in the way of using methane as a fuel, and the possibility of adopting a new form of wire-wound cylinder for high-pressure town gas in place of the more usual alloy steel vessels, which are now unobtainable.

Insurance

In January last, as we recorded at page 49 of our January 12 issue, the Minister of Transport announced that insurers, who in September, 1939, had agreed for three months to continue and to extend, without any general increase in rates, existing policies for grouped motor goods vehicles, although the Emergency Powers (Road Vehicles & Drivers) Order, 1939, removed certain restrictions on "A," "B," and "C" licences under the Road & Rail Traffic Act, 1933, were prepared to extend the arrangement until February 29, 1940. The Minister has now announced that the insurers have further agreed to extend the arrangement until May 31, 1940.

London Transport

In the early days of the war, Servicemen returning on leave were required to make their own way across London from southern railway termini to the northern stations, but within recent weeks London Transport buses, prominently marked "B.E.F. Leave," have provided a cross-London service for troops arriving from France. The buses are hired by the War Office and first began to run on December 18 of last year in time for the Christmas leave, although it is a more recent development for them to be marked. The use of these buses enables many B.E.F. men to catch earlier trains for the north than would otherwise be possible. No service is provided in the reverse direction, as men returning to France travel singly and do not arrive at a terminus in sufficiently large numbers to justify a special bus service.

Four more Green Line coach services were restored in part on Wednesday, March 13, in time for Easter. Fourteen of the routes that had to be withdrawn at the outbreak of war to release coaches for ambulance service are thus now running wholly or in part. The services restored on March 13 were:—

- Route C1. (Chertsey, Weybridge, and Tunbridge Wells, via Kingston, Hammersmith, Victoria, Bromley, and Sevenoaks.)
- Route E. (Aylesbury and Victoria, via Boxmoor, Watford, and Edgware.)
- Route F. (Hemel Hempstead and Victoria, via Boxmoor, Watford, and Edgware.)
- Route H2. (St. Albans and East Grinstead, via Elstree, Golders Green, Victoria, Croydon, and Caterham.)

At the same time, coaches on Route H1 which formerly ran between Luton and Victoria were extended beyond Victoria to East Grinstead, by way of Croydon and Caterham.

Automatic Recording of Bus Movements

A photo-electric apparatus developed experimentally by the London Passenger Transport Board to enable the passage of buses past a given point to be recorded

APPARATUS which was being developed by the London Passenger Transport Board, for enabling a record to be made of the passage of buses past a given point, was illustrated and described in THE RAILWAY GAZETTE of March 11, 1938. It will be recalled that the principle adopted was direct induction between a coil placed on the bus and a receiving coil fixed at the recording point, either suspended over the roadway or buried beneath its surface. As it was considered desirable for the receiving coil to be fixed at the side of the road, further experiments

bility of the mirrors being shielded by other road vehicles. Adjoining this cell a light source was mounted, the beam arrangements of which were such as would allow for departure from parallelism between the bus and the kerb and also allow for reasonable variation in the vertical position of the mirrors due to loading of the bus and camber of the road. The photo-electric cells need to be sited carefully and protected from extraneous light sources by a deep hood to avoid liability to false operation. To distinguish between buses on different routes, mirrors about



*Above : Photo-electric cell and light in one unit on lighting standard
Right : Mirrors on bus roof*



were carried out, and it was found that the apparatus would require modification so as to avoid registering buses proceeding in the opposite direction past the recording point, and also to reduce the risk of the receiver responding to stray influences such as arise from trolleybuses, magnetos of motor vehicles, and other sources.

Consideration was therefore given to alternative systems, principally photo-electric apparatus, and from the investigations to date such a system appears to have its advantages. One method considered was the use of photo-electric circuits to avoid the continuous running of the buzzer on the bus, so that the bus apparatus would be dead until actuated by a light ray and therefore the picking up of stray currents would be obviated, as well as the emission otherwise given by other buses in the vicinity of the recording point. This method, however, would have meant putting on every bus a sensitive photo-cell apparatus and equipment which would be expensive and would increase maintenance costs of the bus equipment. In view of the number of buses in relation to the recording points, it was obviously desirable to reduce the apparatus on the bus and therefore a photo-electric system was developed which entailed only the fitting of mirrors on the bus.

In this system a photo-electric cell was mounted on a lighting standard about level with the top of the bus as shown in the first of our illustrations. This height was necessary to avoid, within reasonable limits, the possi-

9 in. wide and 24 in. long were employed, as shown in our second picture. Thus impulses corresponding to the number of mirrors were given to the photo-electric cell to operate circuits to register the differences thus discerned. Arranging the mirrors so as to be adjustable on a longitudinal axis makes it possible for an appreciable number of route number combinations to be obtained ; it also enables buses from one route to be diverted to another. This photo-electric system has the disadvantage of being put out of action by fog, but non-recording in fog conditions would not be of great importance. The development of bus recorders has been suspended for the present.

Transandine Tunnel opened to Road Traffic

On February 10, the Transandine railway tunnel was opened to road services under the conditions described in the Road Transport Section of THE RAILWAY GAZETTE of January 12, at page 54. By adapting the tunnel for road traffic, the season during which it is possible to make the journey by road between Argentina and Chile has been extended by several months, as at present during about three-quarters of the year the road is impassable owing to snow. The Argentine Roads Board has just finished constructing the junction between the ordinary road and the entrance to the tunnel. A new road, approximately 1,200 metres long, has been built about 1½ km. from Las Cuevas.

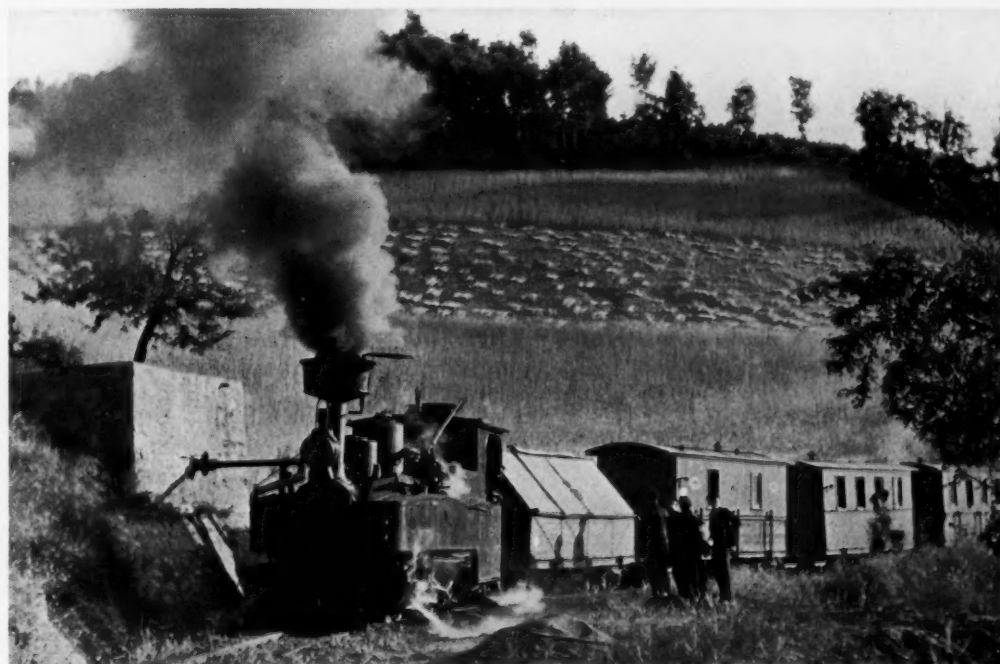
SCENES ON NARROW-GAUGE JUGOSLAV RAILWAYS



An express on the 2 ft. 6 in. gauge line from Belgrade to Dubrovnik



Characteristic wayside scene on the 2 ft. gauge line between Skoplje and Ochrida



A mixed passenger and goods train taking water on the 2 ft. gauge Skoplje-Ochrida line

PASSENGER TRAIN SERVICE.

IN ORDER TO MEET URGENT REQUIREMENTS FOR THE CONVEYANCE OF ADDITIONAL COAL TRAFFIC, THE L.N.E.S. AND L.N.E.R. RAILWAYS REQUEST THAT IT IS NECESSARY TO SUSPEND UNTIL FURTHER NOTICE THE RUNNING OF VARIOUS PASSENGER TRAINS ON LINES WHERE IT IS ESSENTIAL POLICY SHOULD BE AVOIDED. PARTICULARS OF THE SERVICES WHICH WILL BE WITHDRAWN OR ALTERED ON AND FROM MONDAY, 20TH FEBRUARY ARE GIVEN IN SEPARATE NOTICES. IT IS ANTICIPATED THAT NO CURTAILMENT OF LONDON SUBURBAN SERVICES WILL BE NECESSARY AT PRESENT.

By Order
RAILWAY EXECUTIVE COMMITTEE

Above: Letter from R.E.C. received at 1.20 p.m.

Right: Mr. Grasemann, as Chairman of R.E.C. Publicity Subcommittee laying out the poster by means of a chart



British Railways and the War—13

*2 to 2 lines
2 to 4 type*

*Alterations made
by phone 5.0 p.m.
2/2/40.*

PASSENGER TRAIN SERVICE.

IN ORDER TO MEET URGENT REQUIREMENTS FOR THE CONVEYANCE OF ADDITIONAL COAL TRAFFIC, THE L.N.E.S. AND L.N.E.R. RAILWAYS REQUEST THAT IT IS NECESSARY TO SUSPEND UNTIL FURTHER NOTICE THE RUNNING OF VARIOUS PASSENGER TRAINS ON LINES WHERE IT IS ESSENTIAL POLICY SHOULD BE AVOIDED. PARTICULARS OF THE SERVICES WHICH WILL BE WITHDRAWN OR ALTERED ON AND FROM MONDAY, 20TH FEBRUARY ARE GIVEN IN SEPARATE NOTICES. IT IS ANTICIPATED THAT NO CURTAILMENT OF LONDON SUBURBAN SERVICES WILL BE NECESSARY AT PRESENT.

By Order
RAILWAY EXECUTIVE COMMITTEE

*2 to 9
type*

*2 to 17
4 16
type*

All red with line border

The letter, with altered wording received by phone from R.E.C. at 5.0 p.m. inserted, and printing directions indicated with the help of the printer's type chart



Mr. Boyce of the printing firm James Truscott & Son Ltd. receiving the telephonic message and decoding it by means of the type chart. The method is further described in "Transport Services and the War" at page 518



The machine room supervisor taking the first pull from the machine to check wording by telephone with the railway staff



The actual poster displayed 24 hours after the receipt of the copy from the R.E.C.

PREPARING AN URGENT RAILWAY EXECUTIVE COMMITTEE POSTER

RAILWAY NEWS SECTION

PERSONAL

Lt.-Colonel C. F. Carson, who, as announced in our issue of March 29, has been granted leave preparatory to retirement, was born in 1886, graduated at the Kingston Royal Military College in Canada, and was commissioned in June, 1908, in the Royal Engineers. After the usual Chatham course, he

August of that year as Executive Engineer, Karachi. From 1920 to 1922 he occupied a similar position at headquarters (Lahore), and in 1925 went to Quetta, primarily as Executive Engineer, but also officiating for a short time as Divisional Superintendent. In 1929 he officiated as Bridge Engineer, but returned to Quetta as Divisional Superintendent in 1930, occupying that

Special Reserve, he was recalled to military duty and left India for active service in November, 1914. In 1916 he was transferred from the European to the Mesopotamian front, where he served under the Railway Directorate and was appointed a Deputy Assistant Director of Railways. In 1918 Mr. Griffin was transferred to the War Office for work in connection with the



Lt.-Colonel C. F. Carson, M.C., R.E.

Agent (General Manager), North Western Railway, India, 1936-1940



Mr. A. C. Griffin, O.B.E., B.Eng.

Appointed Officiating General Manager, North Western Railway, India

underwent a year's training in the Eastleigh workshops of the former London & South Western Railway before going out to India in December, 1911, when he completed the course in the Locomotive Department of the North Western Railway. In August, 1912, he joined the 25th (Railway) Company of Sappers & Miners and a year later was posted as Assistant Engineer, Headquarters Division, N.W.R. On the outbreak of war he proceeded to France and served there throughout hostilities; he was mentioned in despatches, won the M.C. in January, 1917, and received a bar to that decoration in August, 1918. Returning to India in 1919, Colonel Carson was posted as A.C.R.E., Meerut, prior to rejoining the N.W.R. in

position until December, 1932, when he was selected as a member of the Pope Economy Committee. Colonel Carson returned to the North Western Railway in April, 1933, and was appointed Deputy Agent (Organisation) to carry on the work of the committee on that system. In May, 1936, he was selected to officiate as Agent. The title of Agent was changed to that of General Manager in July, 1938.

Mr. A. C. Griffin, O.B.E., B.Eng., who, as announced in our issue of March 29, has been appointed to officiate as General Manager of the North Western Railway, India, first went to India in October, 1911, where he was posted to the North Western Railway. Being an officer in the Royal Engineers

Transportation Commission to the Peace Conference in Paris. His services were lent to the Civil Government of Mesopotamia in April, 1920, and he served there as Deputy Director of Railways until June, 1924, and subsequently as Director. During his war service Mr. Griffin was mentioned in despatches and was awarded the O.B.E. (Military) in January, 1919. He returned to India in November, 1925, and was appointed Divisional Engineer, Karachi, N.W.R.; later he was placed on special duty there in connection with the design and layout of railways in the port area. In November, 1930, Mr. Griffin was appointed Principal of the Walton Training School for the staff of the N.W.R. For two periods—July-September, 1931; and April-November, 1933—he officiated

**El-Sayed Bey Gawdat**

Appointed Assistant General Manager, Egyptian State Railways

as Deputy Agent of that system. In November, 1934, he was made Divisional Superintendent, Rawalpindi, and two years later was transferred to Delhi in a similar capacity. In May, 1938, Mr. Griffin was appointed Secretary of the Railway Board (Government of India), the position he now relinquishes to take up that of Acting General Manager, North Western Railway. As announced in another column, Mr. Griffin has been promoted to be a permanent Deputy Chief Engineer, State Railways.

El-Sayed Bey Gawdat, B.Sc., Controller of the Department of Industry in the Egyptian Ministry of Commerce & Industry, who, as announced in our issue of March 29 has been appointed Assistant General Manager, Egyptian State Railways, graduated at the School of Engineering at Giza in 1912. In 1913 he was appointed Assistant Lecturer at the School. From 1913 to 1916 he was sent to England on a mission and during this period he obtained his B.Sc. at Birmingham University. He returned to Egypt in 1916, when he was appointed Lecturer at the School of Engineering at Giza, a post he occupied until 1921. In that year he joined the Roads & Bridges Department of the Ministry of Communications as Assistant Director of Works, and remained in this department until 1938 when he obtained the position of Deputy Director General. El-Sayed Bey Gawdat was transferred, in 1939, to the Ministry of Commerce & Industry as Controller of the Department of Industry, and it is from this position that he has now been appointed Assistant General Manager of the Egyptian State Railways.

Mr. N. C. Harris, whose appointment as Chairman of Commissioners of the Victorian Government Railways, we recorded in our issue of March 22, is the son of Mr. C. J. Harris, former

Superintendent of Refreshment Services. He was educated at Scotch College, Melbourne, and at the McGill University, Montreal, where he took a graduate course and obtained a degree as Master of Science, while serving his apprenticeship with the Canadian Pacific Railway. After some experience in the Engineering Department of the C.P.R., Mr. Harris returned to Australia in 1911 and took a position with the Hydro-Electric Power Company of Tasmania. A year later he went to work in the Way & Works Branch of the Victorian Railways, subsequently his interest and knowledge of rolling stock enabled him to transfer to the Rolling Stock Branch. During the last war he served for four

years with the Army, returning with the rank of Major (later he was promoted to the rank of Lieut.-Colonel), and with the distinction of holding the D.S.O. and M.C. In 1922 Mr. Harris was appointed Assistant Chief Mechanical Engineer, Victorian Government Railways, and in April, 1928, became Acting Chief Mechanical Engineer; this position was confirmed in September, 1928. In June, 1933, he was appointed a Commissioner of Railways in place of the late Mr. W. M. Shannon, and for some months in 1934 he acted as Deputy Chairman of Commissioners while Mr. Clapp, the Chairman, was away on a visit to America and Europe. Now that Mr. Clapp has become General Manager, Commonwealth (of Australia) Aircraft Construction, Mr. Harris has been appointed Chairman of Commissioners to the Victorian Government Railways. Since the outbreak of war, he has, as Chairman of the Transport Sub-Committee of the State Emergency Council for Civil Defence, played an active part in drawing up emergency defence plans.

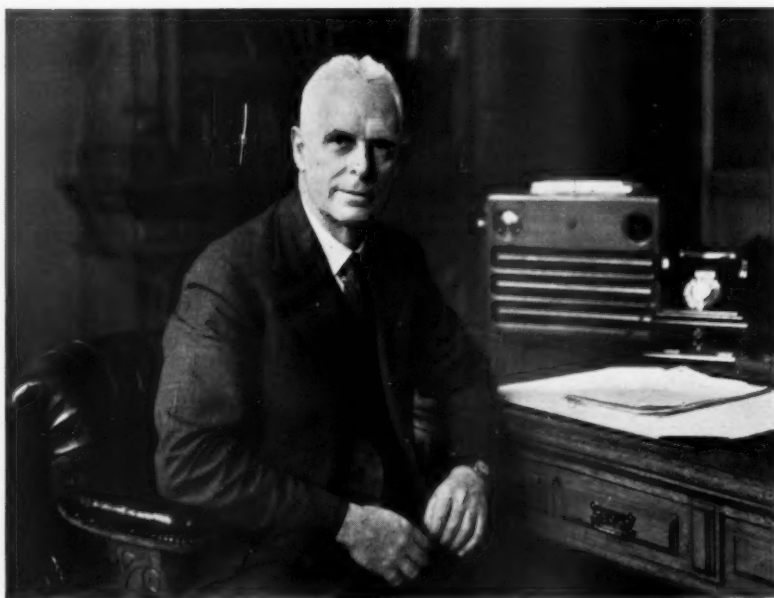
INDIAN RAILWAY STAFF CHANGES

Mr. A. C. Griffin, O.B.E., Secretary to the Railway Board and General Manager-Designate of the N.W.R., has been promoted to be a permanent Deputy Chief Engineer, State Railways.

Lt.-Colonel H. W. Wagstaff, M.C., R.E., and Rai Bahadur R. P. Varma have been promoted to be Deputy Chief Engineers, State Railways, in a provisionally permanent capacity.

Mr. H. M. Walker, whose appointment to officiate as Deputy Chief Mechanical Engineer, N.W.R., we announced last week, is to date from January 3.

The services of Mr. F. G. S. Martin,

**Mr. N. C. Harris**

Appointed Chairman of Commissioners, Victorian Government Railways

M.C., Controller of Stores, E.I.R., have been placed at the disposal of the Government of India. Department of Supply, as from November 30 last.

Mr. A. R. A. Hare Duke has been appointed to officiate as Controller of Stores, E.I.R., in place of Mr. Martin.

Mr. L. H. Swain, Officiating Director of Civil Engineering, Railway Board, has been granted 3½ months' leave as from February 5. He has been succeeded by Mr. A. M. Sims, as already announced in these columns on March 22.

Mr. R. C. Case has been appointed to officiate as Chief Mechanical Engineer, G.I.P.R., as from January 22.

Mr. H. L. Carter has been appointed to officiate as Deputy Chief Engineer (Signals), E.I.R., as from January 14, in place of Mr. R. M. Sinha, granted four months' leave.

Mr. V. O. Raynor, Deputy Chief Commercial Manager, N.W.R., has been granted 28 months' leave preparatory to retirement as from February 6.

Dr. C. D. Newman has been appointed to officiate as Chief Medical Officer, E.B.R., as from January 20.

Dr. F. E. R. Laborda has been appointed to officiate as Chief Medical Officer, E.I.R., as from January 20.

Dr. S. C. Chatterjee has been appointed to officiate as Chief Medical & Health Officer, N.W.R., in place of Dr. E. Haworth reverted, as from February 1.

Rai Bahadur N. C. Ghosh, Divisional Superintendent, E.I.R., has been appointed Transport Advisory Officer as from December 19 last.

Sardar Bahadur Ram Singh has been appointed to officiate as Deputy Chief Engineer, N.W.R., as from January 12.

We regret to record the death on March 25 of Prof. Stephen Mitchell Dixon at the age of 72. Prof. Dixon was Dean of the Faculty of Science at Birmingham University in 1912-13, from 1913 to 1933 was Professor of Civil Engineering at the Imperial College, South Kensington, and from 1930 to 1933 was Dean of the City & Guilds (Engineering) College, London.

M. Vaino Salovaara and M. Karl Ekholm are joint Ministers of Communications & Public Works in the new Finnish Cabinet.

We regret to record the death on March 21 of Mr. Allen Eli Newhook, former Accountant to the London & South Western Railway.

Mr. Andrew Brodie Henderson, Chartered Civil Engineer, has been taken into partnership with Messrs. Livesey & Henderson, as from March 31.

From *The London Gazette* March 29, 1940.—Territorial Army, Royal Engineers: Colonel R. Carpmael, O.B.E., M.Inst.C.E., M.I.Mech.E., resigns his commission (March 30, 1940).

We regret to record the death of Mr. T. E. McDonnell, President of the

Canadian Pacific Express Company, which occurred in Toronto on March 2.

Mr. Arthur Horace Penn has been elected a Director of the Southern Railway in place of Lord Clinton, who has retired.

We regret to record the death of Mr. James Smith, former District Locomotive Foreman, Inverness, London Midland & Scottish Railway. Mr. Smith began his career with the Highland Railway Company in May, 1890, as an apprentice engineer. At the expiry of his apprenticeship he continued in the service of the railway as an engineer, draughtsman, and inspector. When the Inverness-Aviemore line was opened in October, 1898, Mr. Smith was appointed Locomotive Foreman at Aviemore, and remained in this capacity until February, 1916, when he became District Locomotive Foreman at Inverness engine shed. After amalgamation in 1923 Mr. Smith was appointed District Locomotive Foreman at Inverness controlling all running sheds on the High-

land section from Aviemore to Wick in the north and Kyle of Lochalsh in the west, and he held this position until his retirement in May, 1935. The distance by rail from Aviemore to Wick is 195 miles and to the Kyle of Lochalsh 117 miles, and Mr. Smith thus carried out the duties of his office over a wide area. During the war of 1914-19, heavy demands were made on the Running Department in the area, and he was thanked by the authorities at the close of the war.

Mr. Miles B. Reid, M.C., having rejoined H.M. Forces, has resigned his seat on the boards of Powell Duffryn Associated Collieries Limited, Stephenson Clarke & Associated Companies Limited, and Gueret Llewellyn & Merrett Limited.

Sir Felix J. C. Pole, Chairman of Associated Electrical Industries Limited, has been elected Chairman of the Edison Swan Electric Co. Ltd. and Edison Swan Cables Limited, in succession to the late Mr. C. F. Spencer.

STAFF AND LABOUR MATTERS

Railway Electrical Staff

Staff employed in electricity generating stations and sub-stations and on the high-tension cables between them, received an increase of 2s. a week in their rates of pay as from April 1, under the quarterly review of rates of pay which took place in March in accordance with the cost of living sliding scale arrangements.

Electrical Contracting Industry Wages

In accordance with the Wages (War Adjustment) Agreement made between the National Federated Electrical Association and the Electrical Trades Union on November 24, 1939, the cost of living (war) addition for electrical contracting workpeople is raised to 9s. 2d. a week as from the second pay day in April, 1940. This addition is to remain current up to and including the first pay day in July, 1940.

Hotel and Refreshment Room Staff: War Advance

The railway companies have now decided on the amount of the war advance to be paid to the staff employed in railway-owned hotels and refreshment rooms. The conditions under which hotel and refreshment room staff are employed are very different from those of the other sections of railway staff, and accordingly special arrangements have been made to meet the position arising out of the war. The catering side of the railway companies' activities is in fact a part of the catering industry of the country, and it is customary in the catering industry, in fixing the rate of remuneration of the staff, to have regard to such questions as the provision of free food and lodg-

ings, and in certain cases the gratuities which the members of the staff receive. Accordingly, the actual rates of pay in the catering industry are on a somewhat lower scale than those paid in other industries, but it can be said safely that the railway staff are among the best paid sections of the catering industry.

The actual war advances, which apply from January 1, 1940, are as follow:—

Section of Staff	Amount of war advance	
(i) Staff receiving full board and lodgings	Nil	
(ii) Staff whose earnings are augmented by gratuities, who sleep out, but are provided with food whilst on duty	Nil	
(iii) Staff whose earnings are not augmented by gratuities, who sleep out, but are provided with food whilst on duty:—		
Male Staff		
21 years of age and over	3s. a week	
Under 21 years of age	1s. 6d. a week	
Female Staff		
21 years of age and over	2s. a week	
Under 21 years of age	1s. a week	
(iv) Staff living out and not provided with meals whilst on duty:—		
Male Staff		
21 years of age and over	4s. a week	
Under 21 years of age	2s. a week	
Female Staff		
21 years of age and over	3s. a week	
Under 21 years of age	1s. 6d. a week	
Not to be granted to tradesmen, such as upholsterers, joiners, and painters, whose rates of pay are governed largely by the outside rates, nor to staff whose wages are regulated by a trade board.		
(v) Clerical staff who live out and are not provided with food whilst on duty:—		
	Salaried Staff	
	Staff paid salary equivalent rates	
Male Staff		
Adults	£10 per annum	4s. a week
Juniors	£5 per annum	2s. a week
Female Staff		
Adults	3s. a week	3s. a week
Juniors	1s. 6d. a week	1s. 6d. a week

Another section of the railway companies' catering staff to receive a war advance from January 1 is the restaurant car staff, who will receive the following amounts:—

Male adults	3s. a week
Male juniors	1s. 6d. a week

TRANSPORT SERVICES AND THE WAR—32

Preparing an R.E.C. poster—Summer time in Western Europe—Anglo-Scottish sleeping car services—Belgian hospital trains—French military ambulance trains—Italian coal imports—The strategic railways of the Middle East—Increased mileage of Lithuanian Railways

From 11 a.m. on Thursday, August 31 last, when the Government decision was taken to evacuate children and other priority classes of the civil population from vulnerable areas, normal transport conditions in this country ceased. Since then both passenger and goods services and facilities have suffered drastic curtailment, part restoration, and in some cases further curtailment. Notification to members of the public of the changes has been made mainly by poster, and during the past six months we have reproduced in these columns many such poster announcements of the Railway Executive Committee, some of which may be regarded as historic documents. In addition we have produced three poster booklets, price 6d. each, under the title "Railway Posters and the War," and we gather that these have proved of service to many in providing a collection of poster announcements in convenient form. Naturally, this poster notification of changes has involved a carefully planned organisation to ensure that such poster announcements are produced with accuracy and speed, and through the co-operation of Mr. C. Grasemann, the Chairman of the R.E.C. Publicity Sub-Committee, we are able to reproduce on page 514 a series of illustrations showing the methods that have been adopted in preparing an urgent Railway Executive Committee poster.

Preparing an R.E.C. Poster

Very close co-operation between the R.E.C., the railway companies, and the Railway Clearing House printer is necessary, and machinery has been set up enabling posters to be exhibited, at least on the stations near London, within 24 hours of the wording being determined by the R.E.C. Some R.E.C. posters are not, however, always so urgent, and, when this is so, consultation has to be made between the R.E.C., the Chairman of the Publicity Committee, the other three main-line companies, and the R.E.C.'s Publicity Advisor. Even then the posters can be produced and distributed within about three days. In the quest for speed, the first thing done was to have all the borders printed in advance, and these borders, which were chosen under the direction of the Vice-Chairman of the L.P.T.B., whose experience in this direction is well known, were printed outside London, and brought to the London depot so as to be ready for the immediate printing of letterpress.

A particular type was then chosen by the Advertising Manager of the L.N.E.R. and the printer proceeded to stock all sizes. In order to eliminate the inevitable delay of the submission and checking of proofs, the printer then prepared two cards, somewhat like those found at an oculist for testing eyesight, showing every size of type properly numbered. By this means it is possible for the Chairman of the Publicity Committee, who is responsible for laying-out the wording received from the R.E.C., clearly to describe the exact details and size of every word of the poster by telephone to the printers, thereby saving the time of a messenger. The printer then prepares his type and checks the wording when it is on the machine direct with the Chairman of the Publicity Committee, thereby once again saving messengers and time, and also the expense of a proof. In the more urgent cases, the actual wording is left to the Publicity Committee, and has to be agreed by the various members, but in certain posters, sometimes emanating from the Minister of Transport, no alteration to the wording or punctuation may be made.

Summer Time in Western Europe

Summer time began in Spain on March 16. Spanish time and British summer time thus now correspond, as normally during the winter months both countries base their time

on Greenwich Mean Time. Summer time in Germany began last Monday, April 1. The full list of countries in Western Europe which introduced summer time on February 25 (most of which we have already recorded) comprises Great Britain and Northern Ireland, Eire, France, Belgium, and Luxembourg. When summer time began in Eire, part of the country decided to observe the new time, as it is called; the other part decided to ignore it. Eire has never taken kindly to summer time, and in many parts of the country it has never been observed, but the protest is more widespread this year. The chief reason is that many persons consider it has been introduced too early. The cities and towns mostly advanced their clocks, but the country people continued to use the old time. Railway and Government services naturally adhere to the legal (summer) time.

G.W.R. Emergency Headquarters

Some changes have taken place in wartime emergency locations of G.W.R. staffs, and the captions to our illustrations on page 382 of our March 15 issue do not represent the present position. Wasing Place, Midgham, Berks, is the emergency headquarters of the Chief Accountant and his staff. The Gables, Cholsey, has been vacated by the Registration office, which is now located at the Aldermaston huts. Hyde End House, Midgham, Berks (illustrated on page 298 of our March 1 issue), has also been vacated by the Audit staff of the Chief Accountant, and they are now located at the Aldermaston huts.

Anglo-Scottish Sleeping-Car Services

In response to correspondence which has been published in *The Times* during the past few days concerning the reduced sleeping-car services now available to points in Scotland, Sir Ralph L. Wedgwood, Chairman of the Railway Executive Committee, outlined the policy underlying the curtailments in the following letter, which appeared in *The Times* of April 1:—

"The correspondence which has taken place in your columns in regard to the Scottish sleeping-car services may have suggested that there is some divergence of policy between the two railways serving Scotland, and that the public convenience is suffering accordingly. This is not the case. The railways of the country are being operated in one interest, and with one purpose—to give the best public service which is economically practicable. They have kept this purpose before them, to the utmost of their ability, in the arrangements which they have made for the Scottish services.

"It became evident at the outbreak of war that a curtailment of passenger services was inevitable, and that Scotland would be better served by some division of responsibility between the two companies which had till then maintained competitive services. It was accordingly arranged that the West Coast route should provide sleeping cars for Glasgow, Perth, and Inverness, and the East Coast route for Edinburgh and Aberdeen. On all these services first and third class sleeping-car accommodation was provided. At the end of February it became necessary to revise these arrangements. Additional coal traffic, particularly from the Durham and Northumberland coalfields to London and the south of England, made such demands upon the East Coast route that passenger trains by that route had to be drastically curtailed. It was then arranged that the West Coast route should provide first and third class sleeping-car services for Glasgow, Edinburgh, Perth, and Inverness, but there was no West Coast service available for Aberdeen. It was necessary therefore that the East Coast route should continue to serve Aberdeen, within the limits which the curtailed train service permitted.

"This presented a difficult problem. The 7.15 p.m. train from King's Cross to Aberdeen was already loaded to its limit. Sleeping cars are heavy vehicles, and although one could be provided at some sacrifice of the comfort of ordinary passengers, the regular provision of sleeping cars to accommodate both first and third class travellers would have meant an impossible addition to the weight of the train. The railways had to decide whether, in these conditions, they should cut out the sleeping-car service altogether or



Composite second and third class all-steel carriage of the Belgian National Railways, of a type that has been used for conversion into military ambulance trains. The clear wide entrances are particularly suitable for entraining stretcher cases

limit it to one class, which might be either first or third. It was a difficult choice and any decision was bound to leave some travellers dissatisfied. The railways decided that some sleeping accommodation was necessary and that this should be of the first class type. They believed at the time, and are still of opinion, that this was the best solution open to them."

Belgian Hospital Trains

The Belgian National Railways Company have given to the military authorities two 8-car hospital trains complete with the latest improvements. An exceptional feature is that these trains are not made up of old type stock, but consist of the latest type of metal coach that has been put into service. Each train includes a luggage van with a kitchen portion, five ward cars, a carriage for the medical and nursing staff, and a van for the effects of the wounded, with a section for the property of the train staff. The vehicles have been adapted to their new purpose in the railway workshops at Malines, to the requirements of the military authorities; the bedding and other items of equipment have been supplied from Army stores. The kitchen van, which can supply meals for 300 persons, is fitted with an electric range, cupboards, stores, and a complete water plant for the whole train. Each of the hospital ward cars accommodates 30 stretcher cases.

French Military Ambulance Trains

Some of the principal features of the military (Red Cross) ambulance trains now in use on French railways are described in a recent issue of *Notre Metier*, the staff organ of the S.N.C.F. The vehicles specially fitted for the work may be either passenger carriages or luggage vans. In the trains for the conveyance of lying-down cases (*trains pour blessés couchés*), the vehicles have been fitted to take three tiers of stretchers, and they are provided with all requirements for invalids, including lavatories, cupboards for dressings, etc. Other ambulance trains (*trains mixtes*) comprise some vehicles to accommodate lying-down cases of the same description as those already mentioned, and also ordinary carriages for sitting cases. All these ambulance trains also carry kitchen cars for serving meals to the patients and the train staff. A kitchen range with kitchen utensils, a supply of drinking water, tables, benches, cupboards, etc., are provided in these cars. The French Army also has at its disposal a certain number of ambulance railcars fitted up in much the same fashion as the ambulance trains. These cars, although used for shorter journeys, have done excellent service since the beginning of the war and are much appreciated.

The organisation of ambulance trains was prepared for in detail during peacetime. Conversion of luggage vans was a comparatively simple matter, but there were special difficulties in connection with passenger carriages. In addition, so far back as 1925, a certain proportion of third class all-steel coaches constructed by the railways were designed so as to be readily convertible into ambulance vehicles, by the provision of special doors for the passage of stretchers, easily removable partitions in corridors and compartments,



Interior of ward car of a Belgian military ambulance train. Note the method of carrying stretchers on brackets. The illustration shows General Denis, the Belgian War Minister, inspecting one of the first cars to be converted

radiators under the seats arranged so as to be moved to the sides readily, and fixings for stretchers, and so forth.

Italian Coal Imports

The difficulties confronting Germany in her efforts to overcome the British blockade of her seaborne coal exports to Italy appear to be realised fully in Rome. Since we wrote the survey of the position published on page 388 of our March 15 issue, it has become known that a trade protocol was signed in Rome on March 13 between Dr. Clodius and Senator Giannini, which is claimed to envisage the overland supply by Germany to Italy of enough coal "almost to cover Italian national requirements." All six railway lines across the Alps, bearing an average of 40 to 50 trains a day, will be required to transport overland the 1,000,000 tons of coal a month which the Reich has guaranteed to supply, stated the *Popolo Di Roma* on March 22. The paper adds that, since Italy in February imported 510,000 tons of coal from Germany by rail, the project does not seem wholly impracticable, but its fulfilment will demand speeding up the trains and careful organisation by the Germans. Many speculations have been made in various Continental countries concerning

the total of wagons and other equipment which such an effort would involve, but, as these are based on a number of estimated factors (such as the round-trip time of a wagon from the German pithead), they can scarcely be reliable. Possibly 45,000 to 55,000 wagons would be necessary, the bulk of them running on the two routes directly under German control in trainloads at half-hourly intervals. Even if great precision of working makes a substantial proportion of the total required supply achievable, the intensive line occupation and enormous wagon absorption will constitute an outstanding success for the British contraband control in thus having further limited the available railway resources of the Reich, already doubtless heavily taxed by the increased length of haul necessitated by the virtual closure of German ports near the Ruhr and Rhineland.

Strategic Railways in the Middle East

Almost daily, more and more interest attaches to the Middle East, and in particular to that part of it between Batum (on the Black Sea) and Baku (on the Caspian) in the north, and Baghdad in the south. The importance of railway communications in this area has already been mentioned in an editorial note on page 138 in our issue of February 2 last. A further point of interest is the virtual completion of the Baghdad Railway, which has probably, by now, been so nearly finished in respect of permanent way and other essentials as to permit of material trains working throughout the last section to be built, namely Mosul to Baiji. There is, however, we understand, no immediate prospect of opening for public traffic. The last section completed was from Tel Kotehek to Mosul, and this was opened on March 31, 1939.

Final Link in Baghdad Railway

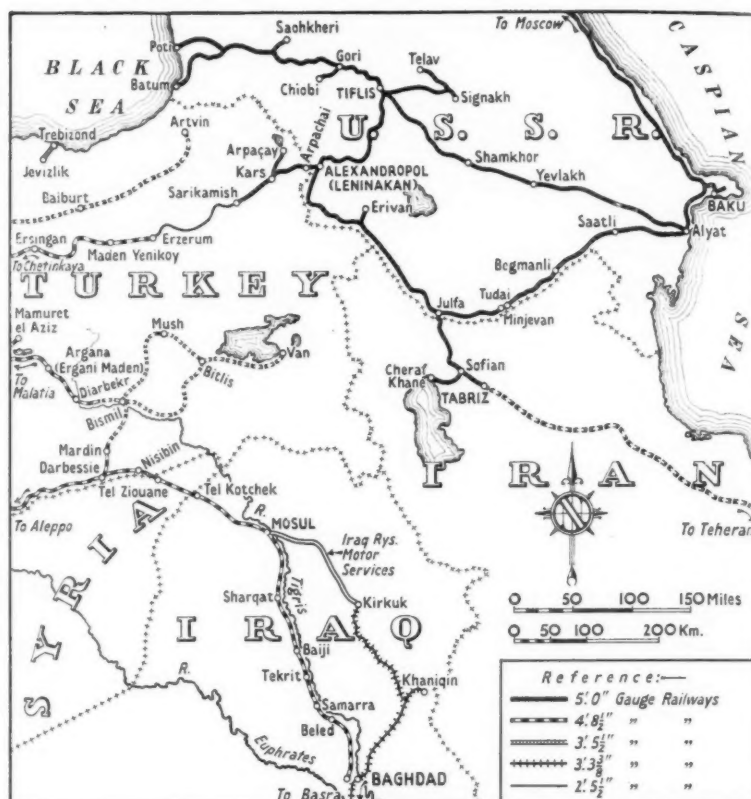
The final link between Mosul and Baiji, about 120 miles in length, as recorded in another editorial note on page 450 in our issue of March 17, 1939, included tunnelling and other difficulties in the section just south of Mosul, but was otherwise fairly easy of construction. It was to have been completed last October, but probably the supply of materials has been affected by the outbreak of war. As this line is so nearly finished it is shown as completed on the accompanying map, and its opening will permit of the through running of International Sleeping Car and other stock from Haidar Pacha, on the Bosphorus, to Baghdad, and give rail communication from Channel ports to the Persian Gulf, except for the crossing of the Bosphorus. Meanwhile the Iraq Railways motor service between Mosul and Kirkuk is still a recognised link in this chain of through passenger communications.

Strategic Soviet Caucasian Line

With regard to the Soviet 5 ft. gauge line from Julfa eastwards to Minjevan—which, as recorded on page 202 in our issue of February 9 last, was then under construction—several maps published recently show this as completed. As it is probably an important strategic link, it is possible that it was under construction some time before publication of the fact was permitted, and that its completion has been specially hastened, just as the Soviet is reported to be protecting hastily the oil storage at Baku and Batum and the pipe lines between those places and elsewhere in that area. On our map we have shown the railway as completed.

Extension of Turkish System

In our issue of January 5 last (page 34) we recorded the completion, on October 20, 1939, of the important



Sketch map of the frontier railways of Turkey, Russia, Iran, Syria, and Iraq—the strategic railways of the Middle East

4 ft. 8½ in. gauge Turkish State line through Erzingan to Erzurum. From Erzurum eastwards to Sarikamish the existing railway is of 2 ft. 5½ in. gauge, linking up with the 5 ft. gauge branch from Alexandropol (Leninakan) at Sarikamish. A message from Istanbul dated February 24 last, suggests, however, that the conversion of the narrow-gauge Erzurum—Sarikamish section is already in hand; it was expected some time ago that this conversion would be undertaken as soon as the standard-gauge line reached Erzurum, and the continuation of the standard gauge right through to the frontier may be taken as only a matter of time.

War Increase of the Lithuanian Railways

Up to the time of the invasion of Poland, Lithuania was operating 1,086 km. (675 miles) of railway on the Russian (5 ft.) gauge and 455 km. (283 miles) of narrow-gauge lines. After the acquisition by Soviet Russia of the eastern part of Poland, Russia ceded to Lithuania a portion of the Vilna territory, although, as shown on the map which we reproduced on page 272 of our February 23 issue, this territory was but a portion of the whole Vilna region which was in dispute between Lithuania and Poland between 1920 and 1938. In the Vilna territory recently ceded by Russia, Lithuania has gained 324 km. (201 miles) of 5-ft. gauge railway, bringing the total in the country up to 1,410 km. (876 miles), and also acquired 55 km. (34 miles) of narrow-gauge lines. Of the latter, however, only about 20 km. (12½ miles) will be worked by Lithuania, namely, the Kiauneliškiai—Svenčionėliai section. The acquisition of Vilna has thus increased the railway network by 30 per cent. and has created a need for more locomotives and rolling stock. The Lithuanian Minister of Communications has stated that this year some 20 passenger coaches, 25 refrigerator cars, and 105 goods wagons will be purchased. In addition, a Lithuanian railway commission is in Moscow to discuss with the U.S.S.R. railway representatives the ques-

tion of rolling stock in connection with the return of the Vilna region to Lithuania.

Dutch-German Frontier Train Services

With the introduction of summer time in Germany on April 1 (briefly recorded above), there is a difference of 1 hr. 40 min. between Dutch and German time, 12 noon of Amsterdam time, for example, being the equivalent of 1.40 p.m. M.E.Z. (Central European Time). The train services crossing the Dutch-German border were revised accordingly from April 1. They now consist of three trains daily each way on each of the sections Gennep—Hassum (third class only), Venlo—Kaldenkirchen (second and third class), Nijmegen—Kleef (second and third class), Enschede—Altstätte (third class only), and four trains each way daily between Zevenaar, Elten, and Emmerich (second and third class). The only route providing first, second, and third class facilities is the main line Oldenzaal, Gildehaus, and Bentheim, and on this route there are trains with all three classes five times daily to Bentheim and six times daily from Bentheim. On the Winterswijk—Borken line all trains had previously been abandoned, and none is being restored with the April 1 timetable. As we recorded at page 304 of our March 1 issue there are no through train services to and from Germany, the only through train maintained in the October, 1939, timetable (that between Cologne and Flushing) having been cancelled in December. Rail connection across the frontier is maintained by the shuttle services of trains mentioned above.

Netherlands-Belgian Railway Co-operation

Conditions are not becoming easier for the small neutral nations adjacent to Germany, but there is some encouragement to be derived from the fact that the circumstances are leading to closer cultural and economic co-operation. To this is due the co-operation in railway technical matters that has now come about, under which the Netherlands and Belgian railway authorities are to keep each other informed on what takes place in their respective spheres. It is remarkable that this has not happened earlier. However, from now onwards those on each side of the frontier will be able to know what happens on the other in technical, financial, and economic matters, what solutions are proposed, and how the interests of railway working may be furthered. In stating that thanks are due to the publicity service of the Belgian National Railways Company for the ready way in which it has assisted in making these arrangements, *Spoor-en Tramwegen* expresses the hope that this contact between two friendly neighbouring nations will prove beneficial to both.

The Part of the Rhodesia Railways in the War

As the transport link between the producers and the sea ports, the Rhodesia Railways play an important part in the Empire war effort by conveying the output of the Northern Rhodesian copper and zinc mines and the Southern Rhodesian chrome and asbestos mines on the first stages of their journeys. The efficient working of the railways provides a form of war service for the employees, but, in addition, over 200 men have already been released for service in military, air and naval units. The output of copper and chrome ore for munition purposes has increased since the outbreak of war, but general import traffic shows a decrease due to the fall in exports from Europe.

Rhodesian Air Lines

All aircraft services in Southern Rhodesia have been taken over by the Government for the duration of the war; £20,000 has been paid for Rhodesia & Nyasaland Airways Limited, and the services will be continued under the title of Southern Rhodesian Air Services. This acquisition was briefly noted in our January 26 issue (page 135). Flights into Portuguese territory will be operated by civil aircraft, and those to Northern Rhodesia and the Union of South Africa by military machines. Commercial services will be maintained as long as the situation allows. A separate Department of State for Air has been set up. This step is in preparation for the important part Southern Rhodesia is to take in the Empire air training scheme. As we recorded at page 323 of our March 1 issue,

the new department falls under the administration of the Minister of Justice, Defence, & Air, whose full title has thus been amplified.

European Air Services

The British-operated air lines in Europe are still confined to the Heston—Le Bourget (Paris) route, worked in association with Air France, and the Perth—Stavanger—Oslo—Stockholm route. The extension of the latter to Helsinki will be resumed in due course. Moreover, it is understood that the wartime difficulties which so far have prevented a regular service being established from England to Lisbon may soon be overcome. It is reported that Gatwick airport is to replace Heston as the London terminus for civil air traffic. The changeover is expected to be made gradually within the next month. Gatwick is 25 min. from Victoria by electric train, and was the terminus of British Airways Limited before the war.

The first of the Swiss air lines, all of which were suspended on August 29 last, just before the outbreak of war, was resumed on March 18; this was the Locarno—Rome service. A daily air line between Locarno and Barcelona was begun on April 1. Both are being operated by Swissair with Douglas air liners. Both services are non-stop, and the flying time is 2½ hr. on the Rome service and 3½ hr. on the Barcelona service. Rail services between the principal Swiss cities and Locarno enable a daylight journey to be made to or from Rome, where connection is made with the chief international air lines. It is hoped to reinstate other international Swissair services shortly.

The Amsterdam—Berlin air service was resumed on March 11. Amsterdam is the only European capital with direct air connection with the capitals of Britain, France, and Germany. A new direct air service between London and Oslo via Amsterdam and Kristiansand, was inaugurated by the K.L.M. on March 15. There are now four services daily between England and Holland in each direction. In February the Dutch and Danish air lines, K.L.M. and D.D.L., completed arrangements to work certain services between London, Amsterdam, and Copenhagen in pool. The two companies run 16 services a week between the cities.

A thrice-weekly passenger and mail service between Milan and Tirana (Albania), via Ancona and Bari, was begun on March 1.

Spain at present has only one air line, that run by an Italian organisation between Rome and Barcelona. The proposed British service from England to Lisbon, to connect with the transatlantic air service, is planned to run via Salamanca. Pending General Franco's permission, Imperial Airways Limited contemplated a flying boat service to Lisbon, via Biscarosse, near Bordeaux, avoiding Spanish territory, but, as we have previously recorded, the company had insufficient equipment to allot a flying boat for the purpose.

Protected Areas in Great Britain

It was announced by the Home Office on April 1, that the Home Secretary has appointed a Regional Advisory Committee for each of the twelve Civil Defence Regions to consider the cases of certain classes of aliens resident in this country. In addition, certain areas adjoining important naval ports have been declared to be Protected Areas under the Aliens Order, 1920. Article 9 of that Order empowers the Secretary of State to prohibit any alien, or class of aliens, from entering or remaining in an area declared to be a Protected Area. The areas now declared are as follow:—

The Humber area, consisting of certain districts in the East Riding of Yorkshire and in Lincolnshire, around the Humber estuary.

The Harwich area, consisting of parts of Suffolk and Essex.

The Medway, Thames, & Dover area, consisting of the County of Kent, and parts of Essex adjoining the Thames estuary.

The Portsmouth area, consisting of the Isle of Wight, parts of the Counties of Southampton and Sussex, including Portsmouth and Southampton and areas adjoining those ports.

The Plymouth area, consisting of parts of Cornwall and Devon around the ports of Plymouth.

The Firth of Forth area, consisting of the Counties of Clackmannan, East Lothian, Kinross, Midlothian, Stirling, West Lothian, and Fife.

The North of Scotland area, consisting of the Counties of Caithness, Sutherland, Ross and Cromarty, Inverness, and part of Argyll.

The Orkney & Zetland area, consisting of the whole of these two counties.

The two areas last-named had previously been declared Protected Areas with considerably wider restrictions.

RAILWAY AND OTHER REPORTS

Barsi Light Railway Co. Ltd.—The directors have declared a dividend of 1½ per cent. actual on the ordinary stock for the half-year ended September 30, 1939.

North Devon & Cornwall Junction Light Railway Company.—The directors' report for the year 1939 states that the Minister of Transport assumed control of the undertaking on September 1, 1939. The financial arrangements with the Southern Railway Company under the terms of the agreement dated April 7, 1922, are not affected by control. The Southern Railway Company worked the line during 1939 and the net revenue was £6,615 compared with £6,617 for 1938. After payment of interest on £130,000 5 per cent. debenture stock and an adjustment in respect of income tax there is a balance of £820 which is carried forward.

Metropolitan Assented Stock.—Glyn, Mills & Co., the trustee and registrar under the trust deed relating to the Metropolitan Assented Stock constituted by Section 89 of the London Passenger Transport Act, 1933, announces that out of the instalment of interest received on the London Transport "C" stock held under such trust deed, a distribution of 1 per cent. actual (less income tax at 7s. in the pound) on such assented stock (on account of the interest on such stock for the year ending June 30, 1940) will be made to those persons who, at the close of business on March 30, 1940, are the registered holders of such assented stock, and that the warrants for such interest will be posted on April 16, 1940.

Fishguard & Rosslare Railways & Harbours Company.—The report for the half year to December 31, 1939, shows on revenue account £39,554, provided under the guarantee of the Great Western and the Great Southern Railways Companies. The credit balance brought into net revenue account is £39,430, which is absorbed as to £13,904 by interest on 3½ per cent. debenture stock, as to £21,659 by dividend on new guaranteed 3½ per cent. preference stock, and as to £3,867 by dividend on new 3½ per cent. preference stock, 1914. Capital expenditure during the half year amounted to £360 net, being £112 on installation of signals, etc., at Currahaha (Kilmacthomas) crossing on the Rosslare and Fermoy railway, and £773 improvements at Fishguard Bay Hotel, less credits of £525.

Guernsey Railway Co. Ltd.—This company, which formerly operated 2½ track miles of tramway, abandoned these in June, 1934, and now runs a bus service in substitution. It owns 19 buses operating on 30 route miles. The paid-up capital now consists of £2,637 in 15,822 ordinary shares of 3s. 4d. each, and £1,555 in 1866 five per cent. non-cumulative preference shares of 16s. 8d. each. Profit for the year 1939 was £987. The dividend on the

preference shares takes £78, and 10 per cent., requiring £264, is being paid on the ordinary shares. It is proposed to carry forward £2,789.

South Wales Transport Co. Ltd.—This Swansea and district bus undertaking, which is also the lessee of the Swansea & Mumbles Railway, has declared a dividend of 5 per cent., less tax, on its ordinary shares. This compares with 4 per cent. in 1938 and nil during the period 1928-1937 inclusive. The company is a subsidiary of the British Electric Traction Co. Ltd.

Trent Motor Traction Co. Ltd.—Net profit for 1939 of this company, which is controlled jointly by the L.M.S.R. and L.N.E.R. Companies and Tilling & British Automobile Traction Limited, amounted to £72,385, compared with £73,444 for the year 1938. Adding £13,575 brought forward, makes a total of £85,960. General reserve takes £20,000, against £20,048, and the dividend for the year is maintained at 10 per cent., leaving £11,932 to be carried forward.

Northern General Transport Co. Ltd.—The directors of this subsidiary of British Electric Traction Co. Ltd. and the L.N.E.R. recommend a final dividend of 6 per cent., making 10 per cent. (same) for the year 1939. Total revenues for the year amounted to £804,462 (against £808,394 for 1938) and the total expenses, including £68,000 (against £54,000) provision for renewals and £50,000 (against £20,000) provision for taxation, were £626,147 (against £626,816), leaving a surplus on working of £178,315 compared with £181,578. Adding £49,525 brought forward gives a total available of £227,840. From this amount the sum of £50,000 (against £78,514) is transferred to reserve, and from the balance of £177,840 the directors again recommend the appropriation of £3,000 to employees' assistance fund and of £19,500 for the year's dividend on the 6½ per cent. preference shares. The 10 per cent. dividend for the year on the ordinary shares takes £83,108, leaving £72,232 to be carried forward.

Birmingham & Midland Motor Omnibus Co. Ltd.—For the year 1939 this company, which is jointly controlled by the L.M.S. and G.W. Railway Companies and by the British Electric Traction Co. Ltd., secured net traffic and other receipts of £733,545, together with interest and dividends of £19,518 (against £650,267 and £13,228 respectively in 1938). The balance of the profit and loss account for the year amounted to £318,951, compared with £246,345. After deducting £50,000 (against £43,692) placed to reserve and adding £76,098 brought forward there is a sum available of £345,049 (against £282,098), out of which it is proposed to apply £10,000 to employees' assistance fund, £8,000 to dividend of 8 per cent. for the year

on the cumulative preference shares, £144,000 to dividend of 10 per cent. for the year on the ordinary shares, and £72,000 to a bonus of 5 per cent. on those shares, leaving £111,049 to be carried forward. In consequence of the war restrictions imposed by the Government on the use of petrol and fuel oil the company's public services have had to be reduced.

West Yorkshire Road Car Co. Ltd.—This company is controlled jointly by the L.N.E.R. and L.M.S.R. companies and Tilling & British Automobile Traction Limited. In the year 1939 traffic receipts and other income, less operating and management, and general expenses, amounted to £401,792, compared with £376,060 for 1938. After deducting charges for fuel taxation and vehicle licences, directors' fees, and appropriations to income tax and depreciation, the net profit was £97,373, compared with £91,795. Adding £12,920 brought forward gives a total of £110,293 against £104,670. The dividend on the 6½ per cent. preference shares again takes £13,000 and 10 per cent. (same) on the ordinary requires £78,750, leaving £18,543 to be carried forward. A bus station has been erected at Knaresborough and a garage and bus station are in course of construction at Scarborough.

Bristol Tramways & Carriage Co. Ltd.—This company, which is controlled by the Western National Omnibus Co. Ltd., which in turn is jointly controlled by the Great Western Railway Company and the National Omnibus & Transport Co. Ltd., secured a net profit for the year 1939 of £221,117, against £226,685 for the previous year. The final dividend is 4 per cent., tax free, against 6 per cent. (less tax), making 8 per cent., tax free, for the year, as compared with 10 per cent., less tax. Reserve for contingencies and renewals is credited with £75,000, compared with £50,000, and the amount carried forward is £25,256, against £23,163 brought in. Further tramway services have been discontinued and omnibuses have been substituted. In view of war conditions the final stage of conversion has been postponed for the present. A further holding of shares has been acquired in Black & White Motorways Limited, an associated company, in part consideration for an outstanding loan.

Colvilles Limited.—The directors recommend a final ordinary dividend of 5 per cent., again making 8 per cent. for the year.

Bruce Peebles & Co. Ltd.—The directors report a profit of £43,157 for the year 1939, and propose to distribute 8 per cent. (against 7 per cent. for 1938) on the ordinary stock.

Westinghouse Electric & Manufacturing Company.—The directors' report for the year 1939 states that orders received amounted to \$214,239,044, compared with \$149,662,776 in 1938, an increase of 43 per cent. Net sales billed were

\$175,071,363, an increase of 11 per cent. Unfilled orders at December 31, 1939, were \$70,821,960, compared with \$40,188,150 at the end of 1938, an increase of 76 per cent. Net income was \$13,854,365, against \$9,052,773, an advance of 53 per cent.

Manganese Bronze & Brass Co. Ltd.—The directors recommend a final ordinary dividend of 50 per cent., making 75 per cent. for the year 1939 (same). Net profit was £88,824 compared with £83,188.

Craven Brothers (Manchester) Limited.—The directors recommend a final dividend on the ordinary shares of 15 per cent., making 22½ per cent. for the year. Net profits were £106,329, compared with £100,653.

Karachi Port Trust.—Ordinary revenue receipts for the year ended March 31, 1939, were Rs. 78,21,000 as against Rs. 82,98,000 in the previous year, a decrease of 6 per cent. Revenue account expenditure on ordinary items was Rs. 69,99,000 as against Rs. 73,77,000 in the previous year, a decrease of 5 per cent. The financial result was a surplus of Rs. 8,22,000 on the year's working. A sum of Rs. 1,90,000 was withdrawn from the reserve fund during the year, for capital works, and at the end of the year this fund stood at Rs. 59,85,388.

British Automatic Co. Ltd.—The report for the year 1939 shows that the outbreak of war in September affected certain sections of this company's business, but the factory of Reeves Limited in Glasgow showed improved results and, on balance, profits have been maintained. Trading profit increased from £78,230 to £82,520, and the net profit, subject to depreciation of automatic machines, was £51,256, against £50,368. Adding £7,539 balance of profit brought forward from 1938 makes a total of £58,795, out of which the directors have allocated £34,245 to depreciation and renewals account, and recommend a dividend of 4½ per cent., tax free, which will require £17,000, leaving £7,550 to be carried forward.

Vulcan Foundry Limited.—The net profit for the year ended December 31, 1939, amounts to £48,172; after deducting £2,500 being interim dividend on the 5 per cent. cumulative preference shares paid on September 29, 1939, and adding the sum of £26,439 brought forward as at December 31, 1938, there is a credit balance on profit and loss account of £72,111. The directors recommend the payment of 2½ per cent. actual on the 5 per cent. cumulative preference shares in respect of the half year ended December 31, 1939, and a dividend of 5 per cent. actual on the ordinary shares for the year ended December 31, 1939, both less income tax, absorbing £44,755, leaving a balance of £27,356 to be carried forward. The previous report covered the eighteen months to December 31, 1938, for which period the ordinary dividend was 5 per cent. actual, less tax.

American Streamliner Accident

On August 12 last the 17-car 6,300 b.h.p. diesel-electric streamlined train of the Union Pacific, City of San Francisco, was derailed when travelling at about 60 m.p.h. over the Southern Pacific line at a point 16 miles west of Carlin, Nevada. The casualties included nine passengers and 15 dining car employees killed, and 99 passengers and 16 employees injured. A brief description with illustrations of the accident was given in our Diesel Railway Traction Supplement for September 1 last. The official report of the Bureau of Safety has recently been issued, and we reproduce below the editorial comment of our American contemporary, the *Railway Age*, for January 13.

On December 29 the Bureau of Safety released its report on the wreck of the streamliner City of San Francisco which occurred on the evening of August 12. The report was reviewed in our January 6 issue. It holds two major points of interest. First, is the presentation of a large volume of evidence testifying to the fact that the derailment was caused by a deliberately misplaced rail at the outside of a long three-degree curve. The other point is the behaviour of the wrecked rolling stock which was of aluminium-alloy construction. Beyond a general statement that several of the cars were involved in the destruction of a 120-ft. Warren truss bridge 169.5 ft. beyond the point at which the derailment occurred, the facts concerning their condition are very meagre and the reader must be content with the statement of the observation of the Bureau's inspectors as to the behaviour of the aluminium-alloy material where failures occurred.

From the general statement of facts in the report and a study of the photographs published following the wreck, it seems clear that some of the cars in the train had collided violently with parts of the bridge structure, causing the complete collapse of the bridge. These violent collisions began with the kitchen-diner unit of the two-unit kitchen-dining car. The front of this unit, apparently after striking one of the bridge trusses, collided with the west abutment with sufficient force to displace it 1½ in. This impact would seem to account for the violent changes of direction of the four units immediately following, three of which came to rest on the river bed 33 ft. below the level of the track, where they were entangled with parts of the destroyed bridge. The only cars the structures of which suffered major failures were the kitchen-diner unit and the three following units, which were those involved in the wreck of the bridge. The fourth following car, which lay on its side on top of the pile, showed no evidence of structural failure other than possible punctures of the side on which it lay.

The inspectors of the Bureau of Safety observed that the cars withstood impact shock to a certain degree, after which some of them collapsed. An absence of intermediate stages of damage was noticeable; in cases of badly damaged material, the state of damage was total collapse. In the discussion of the evidence it is stated that "A great amount of damage to the superstructures was sustained by the cars involved in this accident, especially those where the most fatalities occurred. The aluminium-alloy sheathing which forms a part of the girder construction of the car sides, manifested a tearing characteristic

in that the metal readily tore loose from the rivets; also, it was cut and torn badly because of being dragged on the ballast. There was but little indication of dispersion of strain; in many instances a badly torn section was adjacent to one which had not buckled in the slightest degree."

This is the first major wreck in which passenger-train cars of which aluminium alloys were the principal materials of construction have been involved. It is a matter of regret, therefore, that the same care exercised in establishing the cause of the derailment was not used in marshalling the facts concerning the exact condition of each of the cars which suffered serious damage and developing the immediate causes for that damage. Such facts are essential to the interpretation of the observations of the bureau's inspectors. For instance, what is the significance of the apparent absence of "dispersion of strain" unless one knows the direction from which the forces destroying the structure were applied and something of the time interval within which they acted? On the basis of such facts as are stated in the report and observable in the published photographs of the wreck, is one justified in going beyond the general conclusion that the structures of the cars involved in the wreck of the bridge were subjected to forces which no passenger-train cars are designed to resist, and that failures, therefore, were inevitable?

Forthcoming Meetings

Apr. 8 (Mon.).—**Mariano & Havana Railway Co. Ltd.** (Annual general), Dashwood House, Old Broad Street, E.C., at noon.

Apr. 10 (Wed.).—**Sharpness Docks & Gloucester & Birmingham Navigation Company** (Ordinary general), Docks Office, Gloucester, at 12.30 p.m.

Apr. 11 (Thurs.).—**Norfolk & Western Railway Company** (Annual), at Roanoke, Virginia, U.S.A., at 10 a.m.

Apr. 12 (Fri.).—**North Devon & Cornwall Junction Light Railway Company** (Annual general), Central station, Exeter, at 3.15 p.m.

May 1 (Wed.).—**Canadian Pacific Railway Company** (Annual general) at the offices of the company, Montreal, Canada, at 12 noon.

Forthcoming Events

Apr. 8 (Mon.).—Institute of Transport (London), at Charing Cross Hotel, 1 for 1.15 p.m. Luncheon. Address by Mr. Frank Pick.

Apr. 11 (Thurs.).—Diesel Engine Users' Association, at Caxton Hall, Caxton Street, London, S.W.1, 2.30 p.m. 1939 Bulletin.

Apr. 13 (Sat.).—Institute of Transport (Metropolitan Graduate), at Inst. of Electrical Engineers, Savoy Place, W.C.2, 3 p.m. "Suburban train operation," by Mr. Charles F. Klapper.

Apr. 23 (Tues.).—London School of Economics, at Canterbury Hall, Cartwright Gardens, W.C.1, 5 p.m. "The problem of railway charges (1)," by Mr. Roger Gibb.

Apr. 27 (Sat.).—Permanent Way Institution (Manchester-Liverpool). Inspection of F.B. 131 lbs. and 110 lbs. track, conducted by Mr. N. W. Swinnerton.

Apr. 30 (Tues.).—London School of Economics, at Canterbury Hall, Cartwright Gardens, W.C.1, 5 p.m. "The problem of railway charges (2)," by Mr. Roger Gibb.

RAILWAY AND OTHER MEETINGS

Associated Electrical Industries Limited

The annual general meeting of Associated Electrical Industries Limited was held at Bush House, London, W.C.2, on March 29, Sir Felix J. C. Pole, Chairman of the company, presiding.

The Secretary (Mr. R. H. Haviland) read the notice convening the meeting and the auditors' report.

The Chairman, in moving the adoption of the report and accounts, referred to the loss the company had sustained by the death of Mr. Charles F. Spencer, who was an original director of Associated Electrical Industries Limited, and was Chairman of the subsidiaries the Ediswan and Ediswan Cables Companies.

Once again the directors were able to present a statement of accounts which they hoped the stockholders would regard as satisfactory. The profit for the year, before providing for depreciation and taxation, was £1,470,265, the largest profit earned in the history of the company, and an increase of £70,766, or 5 per cent. over the previous year. This increase, however, was much more than absorbed by the increased provision for taxation, although, owing to the conservative policy of the board in the past in leaving some of the profits in the business, they were spared the additional burden of the excess profits tax, but they had to provide for national defence contribution on the 1939 results, and, of course, for income tax. They had also had to make provision for additional income tax on the profits earned in the year 1938. It had always been the directors' practice to make provision in the year in which profits were earned for the tax liability which would have to be paid at a later date on those profits. Consequent upon the retrospective effect on the profits of 1938 of the increase of tax in October, 1939, from 5s. 6d. to 7s. in the £1 (an increase of 27.3 per cent.), this further tax provision had had to be made from the profits of 1939. The tax provision on the profits of 1939 had been computed on the higher rate of tax now in force for the fiscal year 1940-41, at 7s. 6d. in the £1. It would be seen that whereas they started with a profit £70,766 more at £1,470,265, they arrived at a net profit of £477,083, or 28.2 per cent. less than the corresponding amount for the previous year due to the larger provision for taxation.

Depreciation Appropriation

A substantial amount, namely, £234,956, £5,000 more than the previous year, had been appropriated for depreciation. This was in respect of the Metropolitan-Vickers Electrical Co. Ltd.: the other companies of the group made provision in their own accounts for depreciation. The board had again allocated £100,000 to the dividend equalisation account, increasing it to £300,000: the policy was to keep dividends on as even a basis as possible

in order to retain the interest of a stable body of stockholders. The profit for the year, after deducting taxation and depreciation, was £477,083 (as compared with £664,308 for the previous year) to which was added £251,647 brought in, making a total available for distribution of £728,730. From this there had been appropriated the £100,000 to dividend equalisation account and after providing for dividends on preference stock £67,997, there remained £560,733, and the directors recommended a dividend on the ordinary stock at the rate of 10 per cent. per annum, less tax, leaving a balance to be carried forward of £253,118.

The Polish Contract

The company had been engaged for several years in carrying out, in collaboration with another large British electrical manufacturing company, an important railway electrification contract in Poland. This work had just been completed at the time of the German invasion of Poland on September 1, but all the payments under the contract had not been made. Full provision had been made in the accounts for any losses which might arise in connection with this contract and one or two smaller contracts from Poland. In addition, the board had written off an investment which they had in a company having interests in Poland.

In the consolidated balance sheet, showing the position of the associated group of companies as a single unit, the important change was in capital and general reserves and profit and loss accounts, which items had increased by £207,108 to £3,332,611, the latter figure representing about 68 per cent. on the ordinary capital. These reserves indicated the strength of the undertaking's financial position and demonstrate its ability to provide for increased business.

Unhappily, once more peace had been wantonly destroyed by German aggression and we had been forced into war and were determined to do everything in our power to assist in bringing it to a successful conclusion. The Chairman said he could not say exactly what the company was doing, but might say that it had placed its research, engineering and manufacturing resources at the disposal of the Government and that all its energies and resources were directed towards meeting the needs of the Fighting Services and the Ministry of Supply, whether they represented the company's normal products or special munitions of war. The engineering and research departments were working on many interesting and important problems in collaboration with the scientific departments of the various Services. When the time came to particularise its activities he was sure shareholders would have ample ground for pride in the achievements of their companies.

The board was also continuing its policy of securing as much export business as possible. To that end it was maintaining an efficient organisation abroad and keeping in personal contact with overseas markets. The Government, through the Export Council appeared to contemplate giving more assistance than hitherto to exporting companies. In that connection the company had pointed out the difficulty of obtaining large contracts for electrical and mechanical installations because of the risk incidental to quoting firm prices in view of rising costs of wages and materials. Some foreign competitors were not faced with this trouble and the board felt that the Government should assist the British manufacturer in dealing with this problem.

The company continued to have many orders from the Dominions, the Colonies, and foreign countries, the most recent large order being from Turkey for the construction of a large power station at Catal Agzi, the value being about £1,500,000.

He was very glad that the Government had embarked on an enlarged scheme of Colonial development. He had been a member of the Colonial Development Committee from its inception in 1929 and had visited several of the Colonies: therefore, he was especially able to appreciate the potentialities of the Colonial Empire and the importance of the new scheme announced by Mr. Malcolm MacDonald on February 20.

Large Volume of Orders

The Metropolitan Vickers Electrical Company had on hand a larger volume of orders than ever before for turbo-alternator sets, transformers, switch-gear, electric winders, electric rolling mill equipment, hydro-electric installations, electric locomotives, and other electrical apparatus. It had a record number of employees, and for all the companies of the Associated Electrical group, orders on hand exceeded £19,000,000 and the number of employees was the highest in their history and was still growing.

The changes due to the war had intensified the problems of management and thanks were due to the executive directors, officers, and employees of all ranks of all the companies of the group who had responded willingly and ably to the many and varied demands upon them. Although theirs was a reserved industry, they had nearly 3,000 employees serving with the Forces and a scheme was in operation whereby the service pay of married men and single men having dependants was supplemented by suitable allowances from our various companies. Also much was being done to support the National Savings scheme.

The report and accounts were unanimously adopted and the appointment to the board of Mr. G. E. Bailey, Mr. H. N. Sporborg, and Mr. P. S. Turner, was confirmed, the retiring directors were re-elected.

The Oil Fuel Problem in Argentina

(From Our Correspondent in Buenos Aires)

In view of conditions arising out of the European war, which, as stated in THE RAILWAY GAZETTE of January 12, may interfere with the importation of oil fuel into Argentina, the question as to whether the country's own resources of this product are sufficient for its normal requirements is engaging the attention of the Argentine Government. In addition to fixing a basic price for petroleum, and arranging for the purchase of tankers for shipping oil from abroad, a Decree has now been issued by the Ministry of Agriculture abolishing the previous system of quotas for the importation of this class of combustible; a wise measure in view of the fact that local stocks are reported to be low. The Decree stipulates that the imported oil shall be used exclusively for fuel purposes, and not in the manufacture of other products.

Production and Transportation Facilities

The great distances separating the oil-producing zones from the principal industrial centres make the existence of adequate transport facilities an essential factor in the situation. In this connection, Mr. M. F. Ryan, C.B.E., the General Manager of the Buenos Ayres & Pacific Railway, in an interview granted to the *Buenos Aires Herald*, stressed the importance of his own line and the Central Argentine Railway, attached to the provision of sufficient tank wagons for the conveyance of oil from the Mendoza region to the refineries. He briefly sketched the history of the 50-year-old oil-drilling industry in the Province of Mendoza, and mentioned that as far back as 1897 Cachueta oil was being used in considerable quantities by the Argentine Great Western Railway. Some eight or nine years ago, borings at Tupungato, and one or two other places, revealed oil in small quantities at a depth of 600 metres at many points. Last year a well, which proved to be a gusher, was sunk at Tupungato to a depth of 2,000 metres. Unfortunately, the well caught fire and the drilling plant was destroyed. Nevertheless, the discovery was important, and four more wells bored to the same depth, resulted in a daily output of 1,000 tons. Owing, however, to lack of transportation facilities, the daily production had to be restricted to 600 tons.

The oil, Mr. Ryan said, was transported from the fields in tank lorries by road over a distance of 60 km. to a small refinery at Godoy Cruz, whence it was transferred to railway wagons and thence transported over the B.A.P.R. and C.A.R. lines to Campana and San Lorenzo refineries for conversion into naphtha, kerosene, fuel oil, and so forth.

Continuing, he remarked that it was intended eventually to replace the tank lorries by a pipe line to Anchoris

station on the San Carlos branch of the B.A.P.R., where the oil would be loaded into tank wagons for transport to the Litoral. The lorries, however, would not be dispensed with entirely, as, when the refinery at present under construction at Lujan de Cuyo was operating, these vehicles would be used for the local distribution of oil products.

17,000 tons a Month

Mr. Ryan stated that the railways were at present handling 17,000 tons of oil a month, and they had arranged with the "Y.P.F." oilfields company to deal with the full output of the existing wells when additional tank wagons became available. The B.A.P.R. was confident that by August next it would be able to carry double the present quantity of oil. He went on to explain that five more wells would be in operation shortly, and as a consequence the Y.P.F. had requested the railway to arrange for the transport of the 600,000 tons of oil a year it believed the new wells capable of producing.

New tank wagons were at present being built locally, and he explained that, due to the introduction of elevators and the bulk handling of grain, covered wagons were in great demand, with the result that the railways had a surplus of open wagons, which were being converted into tank wagons. At

present, he said, the B.A.P.R. had 115 wagons under conversion, and were negotiating with the Y.P.F. for the conversion of 100 more. The B.A.P.R. and the C.A.R. had, between them, at present over 100 tank wagons in this service, and it was expected that by next August they would have over 200 employed in this way.

The Outlook

Mr. Ryan declared that all the indications pointed to the field at Tupungato being a big source of oil production, as, now that the preliminary steps had been taken, new wells could be rapidly drilled. To enable the railways to be in a position to transport 2,000,000 tons of oil a year—the tonnage which should be reached eventually—the only additional equipment required was tank wagons, the existing tracks and locomotives being quite adequate for the purpose. Mr. Ryan said that, had it not been for the outbreak of war in Europe and the consequent difficulty of obtaining plate metal, the number of tank wagons available would have been much larger.

On being questioned as to the prospects of Argentina being able to supply all her own oil requirements eventually, Mr. Ryan expressed the opinion that, should the field come up to the expectations of experts, the country should be self-supporting in this respect in the not too distant future, as the production of 2,000,000 tons of oil a year would more than compensate for any decrease in imports from abroad.

A RAILWAY FOR ALBANIA.—Work is to begin on April 21 on sections of a railway from the port of Durazzo (Albania) to Elbasan and Labinoti. The line will be 90 km. long and is estimated to cost 200,000,000 lire.

TRANSPORT IN NORTHERN IRELAND.—Recent questions in the Northern Ireland Senate on the course to be adopted on the recommendations of the Joint Select Committee on Transport received the answer that the matter was still under consideration. In three instances in recent months the Northern Ireland Road Transport Board had purchased lorries from undertakings which were not public hauliers within the meaning of the Act. The result had been to transfer from private to public transport thousands of tons of traffic a year. This had achieved one of the purposes of the Act, the transfer of large blocks of traffic from private to organised public transport.

ANGLO-SPANISH TRADE AGREEMENT.—The full texts of the Loan Agreement and the Trade & Payments Agreement between Great Britain and Spain, as signed in Madrid on March 18, were issued as White Papers by H.M. Stationery Office on March 27 (Cmd. 6188 and 6189). The general features of the agreements were described in THE RAILWAY GAZETTE of March 29

at page 449. Under the Trade & Payments Agreement all debts due on April 1, or falling due after that date, in respect of Spanish goods or freights in Spanish ships, are to be paid into the sterling current account opened at the Bank of England, with the exception of debts relating to goods imported before December 19, 1936. Debts falling due from persons in Spain for United Kingdom goods or freight are to be paid in pesetas to the Instituto Espanol de Moneda Extranjera, for transfer through a sub-account to persons in the United Kingdom. Rules are laid down for the rates of exchange to be used for the transfers.

BRITISH OXYGEN CAPITAL BONUS.—The British Oxygen Co. Ltd. is making a bonus issue of ordinary shares in the proportion of £1 to every £5 of stock held. For this purpose it is proposed to capitalise £576,850 of the general reserve of £615,000. The bonus issue is recommended in order to bring the nominal amount of the issued ordinary capital into closer relationship with the value of the assets employed. This bonus does not provide for the introduction of any new cash capital, and accordingly the directors wish it to be understood that a reduction in the percentage rate of dividend on the issued capital, as increased, is probable.

NOTES AND NEWS

L.M.S.R. Service Charge.—Numbers of L.M.S.R. hotels are introducing a 10 per cent. service charge in place of tips. This follows the success of a similar system adopted after the outbreak of war on the company's dining cars.

Mexican Railway Sale Proposed.—The Mexico City—Nogales Railway, which is owned by the Southern Pacific Railroad, may be acquired by the Mexican Government, according to a message from the *New York Times*. A meeting took place in Mexico City on March 8 between the representative of the railway company and President Cardenas, but the difficulty no doubt lies in the fact that no immediate prospect is seen of the line being put on a paying basis.

Closing of Greenock Princes Pier.—Intimation having been made by the Greenock Harbour Trust that Greenock Princes pier would be closed to shipping from Monday, April 1, in consequence the L.M.S.R. steamers ceased calling at the pier from the date. The L.M.S.R. steamers which have hitherto sailed to and from Greenock Princes pier now call at Gourrock instead, and connections are given to Kilm, Dunoon, Hunter's Quay, Kilcreggan, Cove, and Blairmore by the 4.5 p.m. (daily except Saturdays) train from Glasgow (Central). The 3.55 p.m. (daily except Saturdays) sailing from Dunoon arrives at Gourrock at 4.20 p.m. and connects with the 4.33 p.m. train to Glasgow.

Canadian National Earnings.—Gross earnings of the Canadian National Railways in February, 1940, were \$17,722,756, an increase of \$4,652,981 in comparison with February, 1939. Operating expenses amounted to \$15,959,568, with an increase of \$1,602,451, resulting in net earnings of \$1,763,188, which compare with a deficit of \$1,287,342 for February, 1939. Aggregate gross earnings for the first two months of 1940 totalled \$35,324,491, an increase of \$8,759,711 in comparison with the corresponding

period of 1939, and the aggregate net earnings of \$3,434,984 compare with a deficit of \$1,895,538.

Canadian Pacific Earnings.—Gross earnings of the Canadian Pacific Railway for the 29 days of February, 1940, amounted to \$11,915,000, an increase of \$2,719,000 in comparison with February, 1939. Working expenses totalled \$9,943,000, or \$980,000 more, leaving net earnings \$1,739,000 higher, at \$1,972,000. For the first two months of 1940 gross earnings were \$24,160,000, an increase of \$5,265,000 in comparison with the corresponding period of 1939, and the net earnings of \$3,801,000 showed an advance of \$3,107,000.

Canadian Railwaymen's 44-hour Week.—Because of a "distinct upturn in business" on the Canadian National Railways, the income of hundreds of workmen has just been increased through placing the system's locomotive repair shops in Canada on a 44-hour week basis instead of 40 hours. Locomotive shops are located at Moncton, N.B., Riviere du Loup, St. Malo and Montreal, Que., Stratford, Ont., Transcona and Winnipeg, Man., Edmonton, Alta., and Port Mann, B.C.

Nord Railway Capital Bonus.—A proposal to increase the capital of the Nord Railway Company (of France) from Fr. 210,000,000 to Fr. 315,000,000 by capitalising reserves to the extent of Fr. 105,000,000 was submitted to an extra-ordinary meeting of the company held on April 1. It is intended to distribute one new Fr. 400 share for every two shares held. In its *domaine privé* and its ownership of the Nord-Belge Railway, the Nord possesses a considerable property not passing to the French National Railway Company under the Act of 1937.

No Reduced Fares for Sporting Events.—The Railway Executive Committee announces that the railway companies will not be in a position to quote reduced fares for the Grand National and other sporting events,

except for local journeys within a radius of 60 miles. This is in accordance with a direction given by the Minister of Transport, who has expressed the view that, at a time when owing to the exigencies of war conditions ordinary passenger services have been necessarily reduced, the provision of cheap facilities for persons wishing to travel long distances to attend race meetings and other sporting events cannot be justified.

British and Irish Railway Stocks and Shares

Stocks	Highest 1939	Lowest 1939	Prices	
			April 2, 1940	Rise Fall
G.W.R.				
Cons. Ord. ...	38	21½	49	+1½
5% Con. Pref. ...	92	71	100½	+1
5% Red. Pref. (1950) ...	98	83	102½	+1
4% Deb. ...	103	91	103½	—
4½% Deb. ...	105½	93½	107½	—
4½% Deb. ...	110	99	111	—
5% Deb. ...	121	109½	122½	—
2½% Deb. ...	63½	54	65½	—
5% Rr. Charge ...	117	104	116	—
5% Cons. Guar. ...	111	96½	114	—
L.M.S.R.				
Ord. ...	17	9½	24	+2
4% Pref. (1923) ...	46½	20	53½	+1
4% Pref. ...	63½	37½	64½	+1
5% Red. Pref. (1955) ...	83	58½	90	—
4% Deb. ...	98	85	98½	—
5% Red. Deb. (1952) ...	109	101½	107	—
4% Guar. ...	87½	73	90	+½
L.N.E.R.				
5% Pref. Ord. ...	5½	3½	7	+½
Def. Ord. ...	3½	1½	3½	+1
4% First Pref. ...	38½	19	52½	+1
4% Second Pref. ...	15	7½	20½	+½
5% Red. Pref. (1955) ...	55	38	72½	—
4% First Guar. ...	78½	60	80½	—
4% Second Guar. ...	68½	47	73½	—
3% Deb. ...	71½	57	72½	+1
4% Deb. ...	93	76	95½	+1
5% Red. Deb. (1947) ...	106½	98	103½	—
4½% Sinking Fund Red. Deb. ...	104½	96	102½	—
SOUTHERN				
Pref. Ord. ...	78	46½	70	—
Def. Ord. ...	19½	7	22	+½
5% Pref. ...	100	76	100½	+1
5% Red. Pref. (1964) ...	102½	94	102½	—
5% Guar. Pref. ...	116½	103	114	—
5% Red. Guar. Pref. (1957) ...	112½	102½	111	—
4% Deb. ...	103	91½	102½	+1
5% Deb. ...	118½	109½	122½	—
4% Red. Deb. (1962-67) ...	106	98	104½	—
4% Red. Deb. (1970-80) ...	102	96	103½	—
FORTH BRIDGE				
4% Deb. ...	98½	81	90½	—
4% Guar. ...	95	80	90½	—
L.P.T.B.				
4½% "A" ...	115	103	109½	—
5% "A" ...	123	106½	117½	—
4½% "T.F.A." ...	105	100½	104½	—
5% "B" ...	117½	102	109½	+1
"C" ...	84	63½	44	+½
MERSEY				
Ord. ...	24½	17½	25½	—
4% Perp. Deb. ...	93½	88½	91	—
3% Perp. Deb. ...	77	65½	65½	—
3% Perp. Pref. ...	55	49½	54½	—
IRELAND				
BELFAST & C.D.				
Ord. ...	6	3	4	—
G. NORTHERN				
Ord. ...	6	2½	4½	—
G. SOUTHERN				
Ord. ...	13½	8	10½	—½
Pref. ...	26	10	22½	+½
Guar. ...	40½	22	33½	—
Deb. ...	57	45½	52½	—½

Irish Traffic Returns

IRELAND		Totals for 12th Week			Totals to Date			
		1940	1939	Inc. or Dec.	1940	1939	Inc. or Dec.	
Belfast & C.D. (80 miles)	pass. goods total	2,190 416 2,606	1,667 442 2,109	+ — +	523 26 497	23,971 5,724 29,695	+ + +	4,418 665 5,083
Great Northern (543 miles)	pass. goods total	13,700 10,150 23,850	7,300 11,050 18,350	+ — +	6,400 900 5,500	112,300 133,850 246,150	+ + +	11,500 14,100 25,600
Great Southern (2,076 miles)	pass. goods total	38,406 34,774 73,180	27,721 44,066 71,787	+ — +	10,685 9,292 1,393	346,922 503,583 850,505	+ + +	10,768 12,562 23,330
L.M.S.R. (N.C.C.) (271 miles)	pass. goods total	6,550 3,600 10,150	3,110 3,010 6,120	+ + +	3,440 590 4,030	48,040 40,060 88,100	+ + +	11,790 6,750 18,540

Including St. Patrick's Day and Good Friday, 1940

OFFICIAL NOTICES

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Wednesday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

THE proprietors of British patent No. 466,155 are prepared to sell the patent or to license British manufacturers to work thereunder. It relates to "SLEEPERS FOR RAILWAYS." Address: Boulton, Wade & Tennant, 112, Hatton Garden, London, E.C.1.

Universal Directory of Railway Officials and Railway Year Book

45th Annual Edition, 1939-40

Price 20/- net.

THE DIRECTORY PUBLISHING CO., LTD.
33, Tothill Street, Westminster, S.W.1

CONTRACTS AND TENDERS

The Vulcan Foundry Limited has received an order for 6 Mikado (2-8-2) broad-gauge locomotives of the XD type for service on the Madras & Southern Mahratta Railway; Caprotti valve gear is to be fitted. The locomotives are to be built to the inspection of Messrs. Rendel, Palmer & Tritton.

The North British Locomotive Co. Ltd. has received from the B.B.C.I.R. an order for eight superheater boilers for H-class locos., to be built to the inspection of Messrs. Rendel, Palmer & Tritton.

The Gregg Car Company, of Belgium, has received an order for 40 metre-gauge sugar cane wagons from the Great Western Railway of Brazil.

The South African Railways have placed an order for 85,000 pairs of fish-plates with the Algoma Steel Corporation, Canada, at a price of £41,000, and have divided a second order for 57,000 tons of steel rails at a price of £570,000 equally between the Algoma Steel Corporation and the Dominion Steel Corporation. These two firms in the summer of 1939 also received orders for well over 20,000 tons of steel rails from the South African Railways.

The Egyptian State Railways have placed the following orders:—

Usines Gilson, La Croyère, Belgium: M.S. flats (301.G.8/230: £1,566).

British Iron & Steel Corporation Limited: M.S. flats (301.G.8/130: £316).

Standard Telephones & Cables Limited: Semi-automatic exchange units (313.G.8/310: £4,077).

North British Locomotive Co. Ltd.: Slidebars (21.1145: £240).

Forges, Usines & Fond. de Haine St. Pierre: C.S. hornblocks (21.1153: £301).

Blaenavon Co. Ltd.: Tyres (22.257: £336).

La Brugeoise & Nicaise et Delcuve (Items 1, 4 and 5: £1,184).

Industrial Steels Limited (Item 7: £282).

Tees Side Bridge & Engineering Works Limited (Items 8 and 9: £816).

Forges de Courcelles Belgium (Item 6: 115,500 Belg. fr.).

Axleboxes, buffer shells, etc.
Ex. Ref. No. 321.G.8/23—13
Order No. 21.1170

The Associated Equipment Co. Ltd. has received an order for 28 double-decker trolleybuses with English Electric power equipment from the Hastings Tramway Company, an associate of the Southern Railway through Maidstone & District Motor Services Limited. This is a repeat order of 20 vehicles ordered seven months ago.

The Associated Equipment Co. Ltd. has received an order for six Ranger

single-deck buses from the Automoviles Luarca S.A., in Spain.

The Egyptian State Railways are enquiring for the following items:—

75 tons of mild steel rounds, 1½ in. dia., 16 to 18 ft. long (E.S.R. 301. G.8/207).

16 double cord switchboards (E.S.R. 334.G.8/468: May 4).

19 tons of wagon axle grease (E.S.R. 359. G.8/88: May 1).

Green chromium oxide paste (E.S.R. 360.G.8/150: April 13).

15 tons of 8½-in. mild steel rounds (E.S.R. 1.593).

6,000 m.s. split taper pins (E.S.R. 3.398).

30 axles for heavy bogie carriages (E.S.R. 21.1174).

6 crankcases for railcar oil engines (E.S.R. 22.266).

It is reported that the Argentine Government has sanctioned the expenditure of about 12 million pesos for improvements on the State Railways, including 5 million pesos for track modernisation, 1 million pesos towards the reconstruction of the Argentine Transandine Railway, and 1½ million pesos for the improvement of the Parana—Rio Grande line.

The Swindon Municipal Electricity Committee is proposing to purchase an electric battery shunting locomotive.

The South African Railways are enquiring for the following items:—

700 steel bogie wagon underframes (No. 2550; April 8).

Steel plate (No. 2565; April 15).

Equipment for 5-in. diaphone (No. 2526; April 17).

Pressed steel tank (No. 2605; April 18).

Grinding wheels (No. 2578; April 18).

Piping and fittings (No. 2610; April 18).

Roofing felt (No. 2555; April 19).

One 15-ton Goliath crane (No. 2532; April 22).

4,000 gal. parachute water tank (No. 2618; April 25).

Transfers for carriage notices (No. 2581; April 26).

Two 15-ton Goliath wharf cranes (No. 2586; May 6).

Structural steelwork for harbour shed (No. 2556; May 6).

Bar steel (No. 2626; May 9).

Wrought iron chain (No. 2623; May 9).

Bar steel (No. 2615; May 13).

According to a report of the American consul at Leopoldville the value of railway equipment imported into the Belgian Congo in 1937 was 41,855,059 Congo fr. and in 1938, 44,274,146 Congo fr. (Approx. 146 fr. = £.).

The Indian Stores Department is calling for tenders by April 11 for a loco. wheel lathe for diameters up to 78 in. and a milling machine for axlebox brasses up to 8½ in. by 17 in. by 25 in. (D.O.T. No. T. 17370/40).

Centenary of the Dundee & Arbroath Railway

April 1 marked the centenary of completion of the Dundee & Arbroath Railway, which is now owned jointly by the L.N.E.R. and L.M.S.R. Lord Panmure, who is included among Kay's Portraits as "the Generous Sportsman" and is a legendary figure in the annals of the County, was one of its most zealous promoters. It was he who called the meeting of those interested at which the decision to make application for powers to construct was taken. This meeting was held on October 12, 1835, appropriately enough at the Windmill Inn, the half way house between the two towns, when it was evidently agreed by the local representatives of Dundee and Arbroath to subscribe towards the survey and to take shares in the company. The engineers for the promotion were Messrs. Grainger and Miller.

The railway hugs the North Coast of the Firth of Tay, is approximately 17 miles in length, and is practically level throughout. With such easy country, there are no engineering works of note. The original gauge of the railway was 5 ft. 6 in., and the permanent way was of the stone block type. Before the

completion of its entire length, the railway was opened for traffic on Saturday, October 6, 1838, to a temporary station at Craigie, about 1½ miles from the present terminal at Dundee East station.

The first train consisted of eleven carriages containing 400 passengers, and the running time to Arbroath was 45 min., allowing for 5 min. stoppage to oil the engine. The return trip was made in 43 min., when a speed of 26 m.p.h. was attained. It is related in a contemporary account that the Aberdeen stage coach was passed on the way and to the speedy rail travellers it appeared to be at a standstill! The engine hauling the train on that day was a 2-2-2 named *Wallace*, built by Kinmond, Hutton & Steele; the driving wheel was 5 ft. 6 in. in dia.

The extension of the line to Roodyards, close to Dundee East, was opened on June 3, 1839, and the completed railway between Dundee East and Arbroath was opened on April 1, 1840. On behalf of the joint owners the management of the Dundee & Arbroath Joint Railway is today conducted by the L.N.E.R.

Railway Stock Market

Sentiment in the stock and share markets was assisted by a firmer trend in Government securities, but the impending Budget was again the dominating market factor, and the volume of business showed very little improvement. As a result of inactive markets, the tendency was for individual securities to respond strongly to only moderate demand. Home railway stocks attracted a fair amount of attention, and on balance senior preference and guaranteed issues, as well as junior stocks have moved in favour of holders. Not only are there continued anticipations of a forthcoming increase in freights and fares to offset higher costs of operation, but there are widespread hopes that it may be decided to publish at intervals the pooled revenues of the railways. Moreover it is likely that before long the position of the railways in regard to E.P.T. may be clearly defined. The market is taking the view that there are good prospects of higher dividends on L.M.S.R. and Great Western ordinary and also on Southern deferred; in respect of the current year L.N.E.R. second preference will be expected to receive an improved distribution. The yield of approximately 7½ per cent. given by L.N.E.R. first preference is

regarded as generous, as is that of 7½ per cent. obtainable on L.M.S.R. 1923 preference. Both stocks are assured of their full 4 per cent. dividends during the period of Government control. A similar position exists in regard to Southern preferred, which yields over 7 per cent. and also L.N.E.R. first and second guaranteed.

Great Western ordinary continued in request, and on balance has further improved from 48 to 49½, while the 4 per cent. debentures at 104 and the 5 per cent. preference stock at 100½ were fractionally higher. L.M.S.R. ordinary again attracted a good deal of attention on current market views as to dividend prospects, and the price moved up to 24, which compares with 22½ a week ago. As to the 4 per cent. senior preference, there was a small improvement to 65, and the 1923 preference moved up a point to 53½. The guaranteed stock at 90 was unchanged on balance, and the 5 per cent. debentures remained at 107. On the other hand, the 4 per cent. debentures were a point up to 99; as mentioned last week, this stock seems somewhat undervalued. Southern deferred were again favoured and further appreciated from 21½ to 22 on prospects of an improved dividend. The preferred, how-

ever, was somewhat neglected, but at 70½, was fractionally better on the week. Southern 5 per cent. preference and guaranteed stocks at 100½ and 114½ respectively, were the same as a week ago, but the 4 per cent. debentures were 103, compared with 102. Among L.N.E.R. securities the first preference, which appeared to be the most active, improved from 51½ to 52½; and the second preference was 20½, compared with 20 a week ago. It would appear that the last-named stock is undervalued in relation to both L.M.S.R. ordinary and Southern deferred. L.N.E.R. first guaranteed at 80½ and the second guaranteed at 73½ were both half-a-point better on the week. Whereas the 3 per cent. debentures were slightly higher at 72, the 4 per cent. debentures remained at 95. A point of interest was a better tendency in London Transport "C" which rallied from 43½ to 45.

Among foreign railway securities those of the Argentine companies failed to recover from their recent set-back. On the other hand, San Paulo appreciated from 40 to 43 and Antofagasta had a firmer appearance. Canadian Pacific shares and preference stock were better, following publication of the annual report.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

Railways	Miles open 1939-40	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices				
			Total this year	Inc. or Dec. compared with 1939		Totals		Increase or Decrease		Highest 1939	Lowest 1939	April 2, 1940	Yield % (See Note)	
						This Year	Last Year							
South & Central America	Antofagasta (Chili) & Bolivia	834	24.3.40	£ 21,600	+ 4,950	12	£ 228,750	£ 166,850	+ £ 61,900	Ord. Stk.	10½	4½	9½	Nil
	Argentine North Eastern	753	23.3.40	ps. 124,900	- ps. 21,700	39	ps. 5,785,400	ps. 5,987,400	- ps. 202,000	"	4½	2½	3½	Nil
	Bolivar	174	Feb. 1940	3,520	- 180	8	7,220	7,100	+ 120	6 p.c. Deb.	7½	5½	7	Nil
	Brazil	2,801	23.3.40	ps. 1,760,000	- ps. 112,000	39	ps. 52,231,000	ps. 53,339,000	- ps. 1,108,000	Bonds.	5½	4½	6½	7½
	Buenos Ayres & Pacific	190	10.2.40	£ 71,800	+ 88,900	33	£ 3,329,800	£ 3,537,200	- £ 207,400	Ord. Stk.	5½	2	4	Nil
	Buenos Aires Central	5,082	23.3.40	ps. 2,580,000	- ps. 192,000	39	ps. 90,594,000	ps. 89,538,000	- ps. 1,056,000	Mt. Deb.	14	8	13½	Nil
	Buenos Ayres Gt. Southern	1,930	23.3.40	ps. 737,000	- ps. 203,000	39	ps. 29,825,000	ps. 27,774,000	+ ps. 2,051,000	Ord. Stk.	13½	4½	8½	Nil
	Buenos Ayres Western	3,700	23.3.40	ps. 1,625,900	- ps. 549,600	39	ps. 67,715,300	ps. 72,776,200	- ps. 5,060,900	"	10½	4	7	Nil
	Central Argentine	972	23.3.40	22,377	+ 5,081	39	804,069	711,625	+ 92,444	"	11½	4	7	Nil
	Do.	188	Jan. 1940	11,360	- 5,266	31	119,201	155,492	- 36,291	Did.	4	1½	4	Nil
	Cent. Uruguay of M. Video	70	Feb. 1940	10,500	- 2,300	8	22,700	26,100	- 3,400	Ord. Stk.	2½	1½	3½	Nil
	Dorada	810	23.3.40	ps. 183,300	- ps. 98,500	39	ps. 9,217,500	ps. 9,755,700	- ps. 538,200	Ord. Stk.	24½	18	22	9½
	Entre Rios	1,016	23.3.40	10,200	+ 500	12	159,500	136,400	+ 23,100	1 Mt. Db.	104½	102	102½	5½
	Great Western of Brazil	794	Feb. 1940	\$604,831	+ \$55,394	8	\$1,170,321	\$1,097,710	+ \$72,611	Ord. Sh.	6	3	3½	Nil
	International of Cl. Amer.	224	Mar. 1940	7,370	+ 955	13	21,975	15,820	+ 6,155	Ord. Sh.	3/-	1 2/3	7½	Nil
	Interoceanic of Mexico	1,918	23.3.40	19,980	- 3,537	12	271,600	248,192	+ 23,408	Is. Pref.	7½d.	7½d.	7½	Nil
	La Guaira & Caracas	483	7.3.40	\$332,800	- \$10,000	9	\$3,011,600	\$2,945,600	+ \$66,000	Suk.	7½d.	6½	6½	Nil
	Leopoldina	319	Feb. 1940	12,749	+ 3,448	35	80,695	73,867	+ 6,828	Ord. Stk.	2½	2	2	Nil
	Mexican	386	15.3.40	7,419	+ 407	10	42,209	26,214	+ 15,995	"	1½	1	1	Nil
	Midland of Uruguay	274	23.3.40	\$2,956,000	+ \$157,000	39	\$121,418,000	\$117,246,000	+ \$4,172,000	2/-	2	1	1	Nil
	Nitrato	1,059	Feb. 1940	66,923	+ 5,122	35	531,913	539,567	- 7,654	Ord. Sh.	2½	1½	2½	5½
	Paraguay Central	100	24.2.40	£ 44,338	- £ 1,662	35	£ 615,137	£ 714,464	- £ 99,327	Pr. Li. Stk.	45½	36	40	15
	Peruvian Corporation	133	17.3.40	37,260	+ 10,787	11	365,069	307,825	+ 57,244	Pref.	19½	17½	3	Nil
	Salvador	160	Feb. 1940	2,330	- 680	35	20,130	23,795	- 3,665	Pr. Li. Db.	38	20	43½	4½
	San Paulo	1,353	23.3.40	46,515	- 442	39	852,812	869,048	- 16,236	Ord. Sh.	19½	16	15	Nil
	Talca	73	Feb. 1940	1,155	+ 378	35	8,543	8,246	+ 297	Ord. Sh.	2	6/6	1½	7½
	United of Havana	23,696	21.3.40	817,775	+ 177,287	11	9,500,355	7,244,341	+ 2,256,014	Ord. Stk.	38	20	43½	4½
Uruguay Northern	17,169	21.3.40	525,000	+ 72,000	11	6,405,800	5,170,400	+ 1,235,400	Deb. Stk.	2	2	2	Nil	
Canada	Canadian National	—	—	—	—	—	—	—	—	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	—	—	—	—	—	—
	Grand Trunk	—	—	—	—	—	—	—	—	—	—	—	—	—
Canadian Pacific	17,169	21.3.40	525,000	+ 72,000	11	6,405,800	5,170,400	+ 1,235,400	4 p.c. Gar.	100½	76	101½	3½	
India	Assam Bengal	1,329	29.2.40	44,880	+ 4,956	49	1,444,959	1,396,121	+ 48,837	Ord. Stk.	74½	60	79½	3½
	Barsi Light	202	10.3.40	3,105	+ 165	50	119,715	129,930	- 10,215	Ord. Sh.	56½	50½	45	8½
	Bengal & North Western	2,096	10.3.40	87,877	+ 12,685	23	1,266,286	1,305,317	- 39,031	Ord. Stk.	277	229½	280	5½
	Bengal Dooars & Extension	161	10.3.40	3,620	+ 505	50	134,012	141,089	- 7,077	"	91	84½	212	3½
	Bengal-Nagpur	3,267	10.3.40	256,650	+ 47,262	50	7,652,170	6,663,932	+ 988,238	"	94	83½	94½	4½
	Bombay, Baroda & Cl. India	2,986	20.3.40	289,200	+ 23,175	51	8,824,725	8,620,125	+ 204,600	"	94	83½	94½	4½
	Madras & Southern Mahratta	2,967	10.3.40	168,075	+ 10,100	50	5,500,801	5,311,785	+ 189,016	"	108	90	106½	5½
	Rohilkund & Kumaon	571	10.3.40	17,723	+ 3,495	23	267,557	242,038	+ 25,520	"	104½	92	102½	7½
	South Indian	2,531½	10.3.40	112,310	+ 2,515	50	3,866,164	3,858,548	+ 7,616	"	280	263	280	5½
	Do.	—	—	—	—	—	—	—	—	"	102½	88	92½	5½
Various	Beira	204	Jan. 1940	74,624	—	17	294,262	—	—	—	—	—	—	—
	Egyptian Delta	623	29.2.40	5,047	+ 450	49	197,922	198,496	- 574	Prf. Sh.	1	1	1	Nil
	Kenya & Uganda	1,625	May 1939	206,557	- 11,295	21	1,220,870	1,309,332	- 88,462	"	1	1	1	Nil
	Manila	277	Jan. 1940	13,729	- 1,218	31	90,657	107,233	- 16,576	B. Deb.	55	39	48½	8½
	Midland of W. Australia	1,900	3.2.40	71,995	+ 24,976	45	1,677,942	1,800,519	- 122,577	Inc. Deb.	91½	87½	84	4½
	Nigerian	2,442½	Jan. 1940	384,405	+ 17	17	1,520,480	—	—	"	—	—	—	—
	Rhodesia	3,284	9.3.40	648,010	+ 12,150	50	31,969,210	30,579,261	+ 1,389,949	"	—	—	—	—
	South Africa	4,774	Dec., 1939	943,915	+ 84,727	26	4,838,002	4,733,741	+ 104,261	"	—	—	—	—
Victoria	—	—	—	—	—	—	—	—	"	—	—	—	—	

Note. Yields are based on the approximate current prices and are within a fraction of ½. Argentine traffics are now given in pesos. † Receipts are calculated @ 1s. 6d. to the rupee. § ex dividend